5-3820-205-10/2

TM 5-3820-205-10/2

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR'S MANUAL

CRUSHER, JAW: DIESEL AND ELECTRIC DRIVEN;
WHEEL MOUNTED PNEUMATIC TIRES; 75 TON PER HOUR
(EAGLE CRUSHER MODEL 5157)
FSN 3820-783-7311
COMPONENT OF CRUSHING AND SCREENING
PLANT; DIESEL AND ELECTRIC DRIVEN;
WHEEL MOUNTED; 75 TON PER HOUR

This copy is a reprint which includes current pages from Change 3.

HEADQUARTERS, DEPARTMENT OF THE ARMY

24 JAN 1964

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SAFETY PRECAUTIONS

Before Operation

Always report or correct any condition that may result in injury to personnel if operation is to be continued.

Before starting the engine or operating any of the crusher mechanism, see that no loose bars, tools, or parts are laying in or on any part of the equipment, as they could cause serious damage to the equipment or bodily injury to personnel.

Install a suitable ground rod and lead at the power source and ground the crusher frame before connecting the power source to the main power input receptacle at the main control panel.

Do not fill the fuel tank while the engine is running. Be sure there are no open flames which may ignite the fuel vapors. Always provide metal-to-metal contact between the fuel container and the fuel tank to avoid igniting vapor with a static spark.

When servicing storage batteries, do not smoke or use an open flame in the vicinity. Batteries generate hydrogen, a highly explosive gas.

Do not operate the crusher without the moveable jaw drive pulley and belt screen guard and the moveable jaw pit guard chains installed.

Make certain that no one is on or near any moving part of the crusher before the engine clutch is engaged or any of the mechanisms actuated. Serious injury or death could result.

During Operations

Always report or correct any condition that may result in injury to personnel if operation is to be continued.

Use extreme caution in removing the radiator cap from an overheated engine. If time permits allow the engine to cool.

Never fill the fuel tank while the engine is running. Be sure there are no open flames that may ignite the fuel vapors while the tank is being filled.

At all times attempt to keep one hand on the guard rail or guard chain while the crusher is in operation. The shaking motion of the crusher could cause a misstep, throwing personnel into the machinery or to the ground causing serious injury or death.

The starter priming fluid is highly flammable, explosive, and toxic. Use extreme care in handling to avoid explosion, fire and personnel injury.

Do not operate the equipment if the ground connection is loose or faulty. Death by electrocution could result by personnel contacting ungrounded equipment, should some electrical fault develop in the power equipment or lines.

After Operations

When filling the fuel tank, do not smoke or use an open flame in the vicinity. Maintain a metal-to-metal contact between filling nozzle and the fuel tank.

When servicing storage batteries, do not smoke or use an open flame in the vicinity. Batteries generate an explosive hydrogen gas during charging.

The moveable jaw mechanism does not stop immediately when the engine clutch is disengaged. Do not attempt any maintenance, adjustments, or servicing, until the moveable jaw has come to a complete stop.

Use extreme caution in removing the radiator cap from an overheated engine. If time permits, allow the engine to cool.

Change in force: C 3

*TM 5-3820-205-10/2
C 3

Change }
No. 3 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., *12 September 1973*

Operator's Manual
CRUSHER, JAW; DIESEL AND ELECTRIC DRIVEN, WHEEL MOUNTED, PNEUMATIC TIRES; 75 TON PER HOUR (EAGLE CRUSHER MODEL 5157) FSN 3820-783-7311 (EAGLE CRUSHER MODEL 5157B) FSN 3820-880-0540 COMPONENT OF CRUSHING AND SCREENING PLANT, DIESEL AND ELECTRIC DRIVEN; WHEEL MOUNTED; 75 TON PER HOUR

TM 5-3820-205-10/2, 24 January 1964, is changed as follows:

The title is changed as shown above.

Page 1. Appendix II caption is superseded as follows:

BASIC ISSUE ITEM LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST.

Page 2. In paragraph 1a, line 3, after "5157," add "and Model 5157B."

Paragraph 1*d* is superseded as follows:

d. The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commander, US Army Troop Support Command, ATTN: AMSTS-MPP, 4300 Goodfellow Boulevard, St. Louis, MO 63120.

Paragraph 2 is superseded as follows:

2. Forms and Records

DA Forms and procedures used for equipment maintenance will be only those prescribed by TM 38-750, Army Equipment Record Procedures.

In paragraph 3, line 1, after "5157," add "and 5157B."

Page 6. In paragraph 5*b* (1), line 2, after "5157," add "and 5157B."

In paragraph 5b (2), line 3, after "2285," add "(Model 5157) and 6009 (Model 5157B)."

In paragraph 5b (2), line 3, after "F-4525," add "(Model 5157) and F-4525-A (Model 5157B)."

In paragraph 5b (6), line 3, after "4526," add "(Model 5157) and 4526-A (Model 5157B)."

In paragraph 5b (8), line 2, after "5930," add "(Model 5157) and 5930-B (Model 5157B)."

Page 7. Paragraph 5*b* (13) is superseded as follows:

(13) *Dimensions and weights.*

	Model 5157	Model 5157B
Overall length	489 in.	483 in.
Overall height	144 in.	143 in.
Overall width	108 in.	106 in.
Overall weight	71,400 lb.	72,200 lb.
Cubage	4,428 cu. ft.	4,290 cu. ft.
Wheel base	284 in.	275 1/2 in.

Paragraph 6 is superseded as follows:

6. Difference in Models

This manual covers the Eagle Model 5157 Jaw Crusher, serial number range 2050 through 2087, 2090 through 2129, and Eagle Model 5157B Jaw Crusher, serial number range 2175

***This Change supersedes C 1, 14 June 1968 and C 2, 12 February 1969.**

through 2197. Where differences exist between the two serial number ranges, each serial number range is covered separately in the applicable maintenance section of this manual. Units within serial number range 2029 through 2129 have two diesel engine air cleaners, units within serial number range 2050 through 2087 and 2175 through 2197 have one. Units within serial number range 2090 through 2129 and 2175 through 2197 have both coolant temperature and lubricating oil pressure warning lights, but the units within serial number range 2050 through 2087 do not. Units within serial number range 2090 through 2129 and 2175 through 2197 are equipped with a dual ignition starter switch. Units within serial number range 2050 through 2087 are equipped with a separate switch for the ignition circuit and another switch for the starter energizing circuit.

Page 8. Subparagraph 8*h* is added after subparagraph 8*g*.

h. Maintenance and Operating Supplies. Refer to table 1 for a complete list of maintenance and operating supplies required for initial operation of the crusher.

Table 1. Maintenance and Operating Supplies

(1) Component application	(2) Federal stock number	(3) Description	(4) Quantity required for initial operation	(5) Quantity required for 8 hrs operation	(6) Notes
CRANKCASE		OIL, LUBRICATING: 55-gal. drum as follows:			(1) Includes quantity of oil to fill engine oil system as follows: Crankcase - 18 qts Oil filter - 6 qts (2) Reference C9100-IL for additional data and requisitioning procedure. (3) See LO 5-3820-205-20/2 for grade application and replacement intervals. (4) Use oil as prescribed in first item. (5) Tank capacity (6) Average fuel consumption is 9.5 gal per hour of continuous operation. (7) See TM 5-3820-205-20/2 for quantities, ambient temperatures, specific gravities, and replenishment. (8) Use same grease prescribed for the 7521 PITMAN. (9) Quantity indicated is the minimum required for one each. Start when temperature is below 40° F.
	9150-265-9436 (2)	OE 30	24 qt (1)	(3)	
	9150-265-9429 (2)	OE 10	24 qt (1)	(3)	
	9150-242-7604 (2)	OES	24 qt (1)	(3)	
TANK, FUEL		FUEL OIL, DIESEL: Bulk as follows:			
	9140-286-5283 (2)	DF-A	100 gal (5)	76 gal (6)	
	9140-286-5286 (2)	DF-1	100 gal (5)	76 gal (6)	
	9140-286-5994 (2)	DF-2	100 gal (5)	76 gal (6)	
ENGINE STARTING AIDS.	2910-355-6377	CAPSULE, METAL: Pressure primed (1MO-10).	1 (9)		
RADIATOR		WATER:			
		ANTIFREEZE: 55-gal. drum as follows:			
	6850-243-1990	Ethylene glycol	(7)	(7)	
	6850-174-1806	Compound arctic	(7)	(7)	
TANK, HYDRAULIC OIL.		OIL, LUBRICATING: 55-gal. drum as follows:			
	9150-265-9429 (2)	OE 10	40 qt	(3)	
	9150-242-7604 (2)	OES	40 qt	(3)	
GEAR ASSEMBLY, CONVEYOR DRIVE.		OIL, LUBRICATING	3¾ qt	(3)	
GEAR ASSEMBLY, FEEDER DRIVE.		OIL, LUBRICATING: (4)	8 qt	(3)	
GEAR HOUSING, FEEDER DRIVE.		OIL, LUBRICATING, GEAR: 5-gal. drum as follows:			
	9150-577-5844	GO 90	4 qt	(3)	
	9150-257-5443	GOS	4 qt	(3)	
PITMAN		GREASE, AUTOMOTIVE AND ARTILLERY: 35-lb. pail as follows:			
	9150-190-0907 (2)	GAA	80 lb	4 lb	
GREASE POINTS		GREASE, AUTOMOTIVE AND ARTILLERY: (8)	4 lb	1 lb	

Page 16. Below paragraph 9*n*, add the following:

o. Install the air cleaner channel holding bracket. Position the air cleaner extension tubing with U-bolts. Install the precleaner.

Page 19. Below paragraph 10*j*, add the following:

k. Remove the precleaner, air cleaner extension tubing with U bolts, and air cleaner channel holding bracket.

Page 28. After figure 13 (9), add figure 13.1.

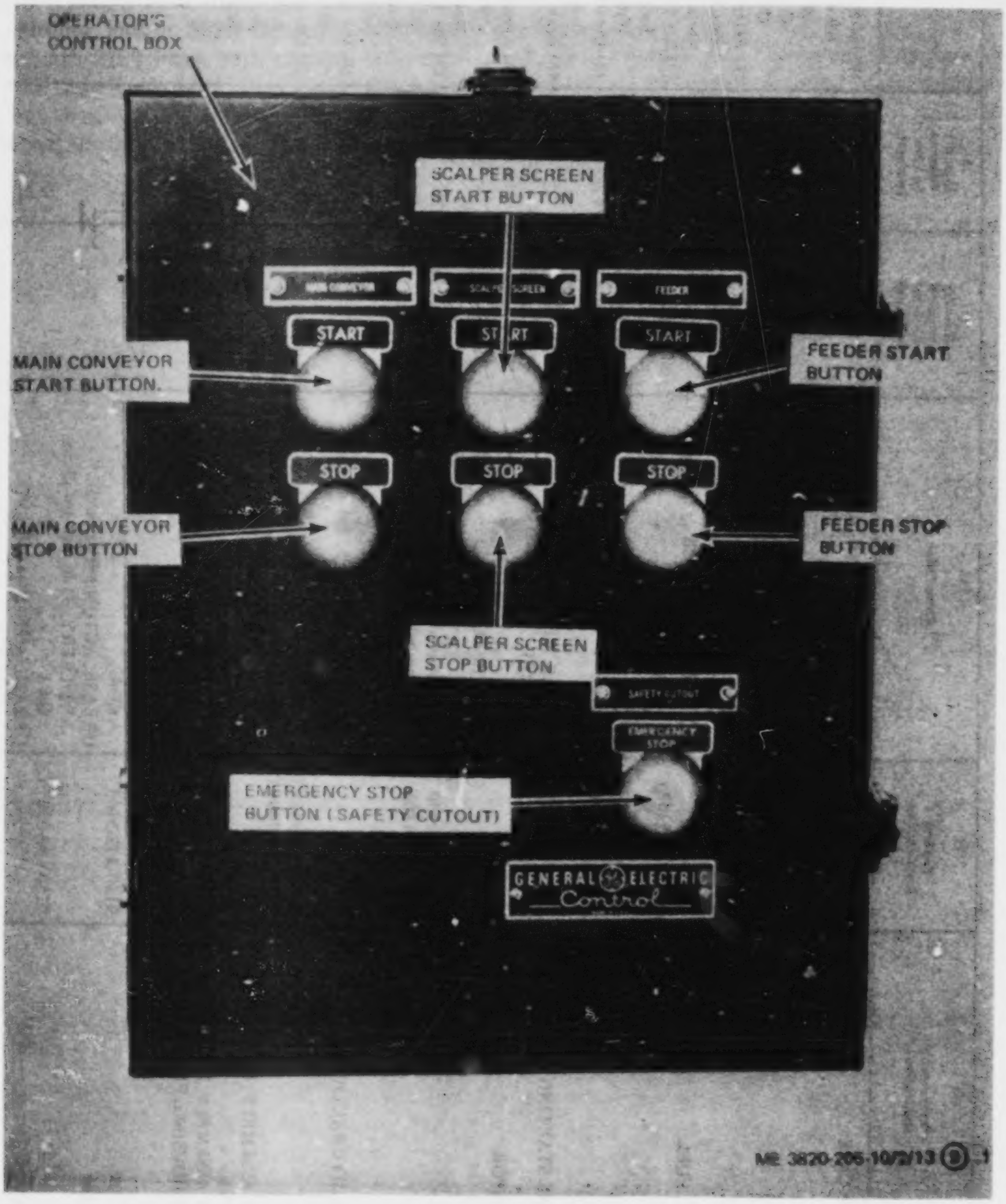

OPERATOR'S CONTROL BOX
SCALPER SCREEN START BUTTON
MAIN CONVEYOR
SCALPER SCREEN
FEEDER
START
START
START
MAIN CONVEYOR START BUTTON.
FEEDER START BUTTON
STOP
STOP
STOP
MAIN CONVEYOR STOP BUTTON
FEEDER STOP BUTTON
SCALPER SCREEN STOP BUTTON
SAFETY CUTOUT
EMERGENCY STOP
EMERGENCY STOP BUTTON (SAFETY CUTOUT)
GENERAL ELECTRIC
Control
ME 3820-205-10/2/13

Figure 13.1. Controls and instruments (Model 5157B).

Page 29. In paragraph 13, 4th line, after "5157," add "and Model 5157B."

Paragraph 14*b* is superseded as follows:

b. Starting the Engine. Start the engine in the numerical sequence as instructed on figure 14 (Model 5157) and 14.1 (Model 5157B).

Paragraph 15 is superseded as follows:

15. Stopping the Engine

a. Stop the engine in the numerical sequence as instructed in figure 15 (Model 5157) and 15.1 (Model 5157B).

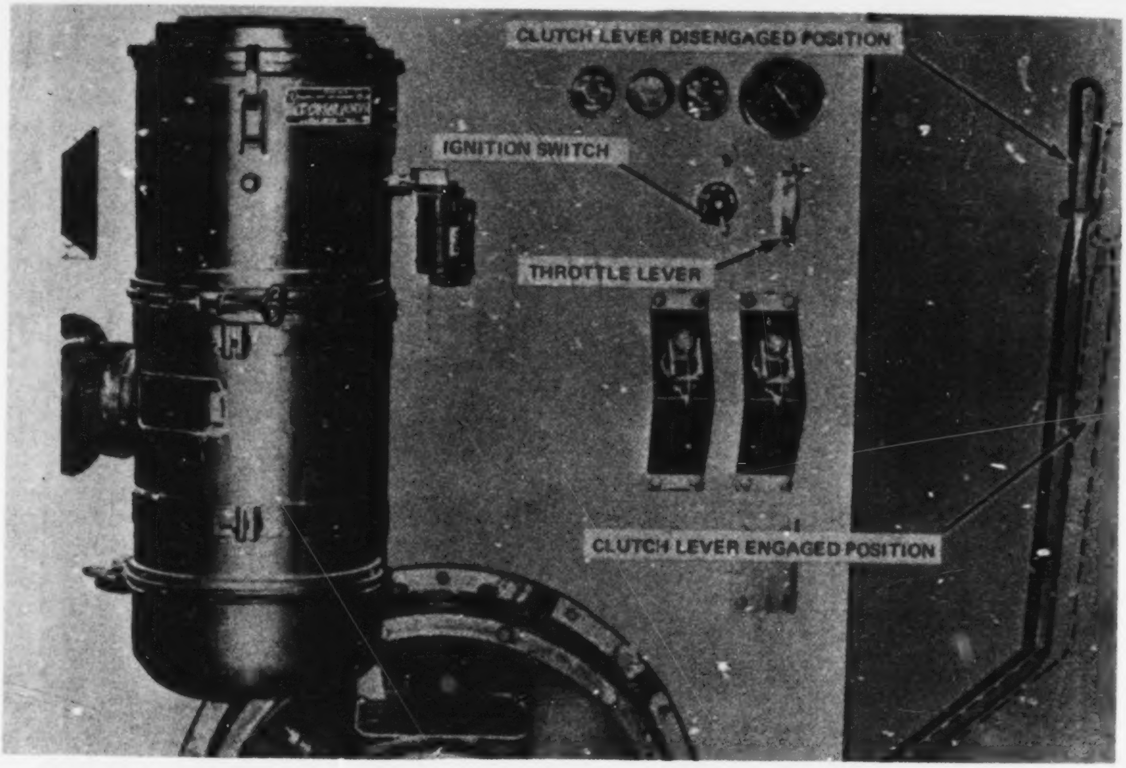
b. Close fuel shutoff valve (B, fig. 13).

Page 30. **After figure 14, add figure 14.1.**

NOTE: UNITS OF EQUIPMENT WITHIN SERIAL NUMBER RANGE 2090 THRU 2129 ARE EQUIPPED WITH DUAL IGNITION-STARTER SWITCH.

CAUTION: DO NOT CRANK THE ENGINE FOR MORE THAN 30 SECONDS AT A TIME. ALLOW ONE MINUTE BETWEEN ATTEMPTS IF ENGINE FAILS TO START.

1. DISENGAGE THE CLUTCH AND MOVE THE THROTTLE LEVER TO 1/4 OPEN.
2. TURN IGNITION SWITCH TO "ON" POSITION, PRESS STARTER BUTTON (RELEASE IMMEDIATELY WHEN ENGINE STARTS). (SEE NOTE.)
3. MOVE THROTTLE LEVER TO "RUN" POSITION.
4. RUN ENGINE AT 1,100 RPM UNTIL OPERATING TEMPERATURE IS REACHED BEFORE APPLYING LOAD.
5. OBSERVE ALL INSTRUMENTS AND GAGES FOR PROPER OPERATING RANGE.


CLUTCH LEVER DISENGAGED POSITION
IGNITION SWITCH
THROTTLE LEVER
CLUTCH LEVER ENGAGED POSITION

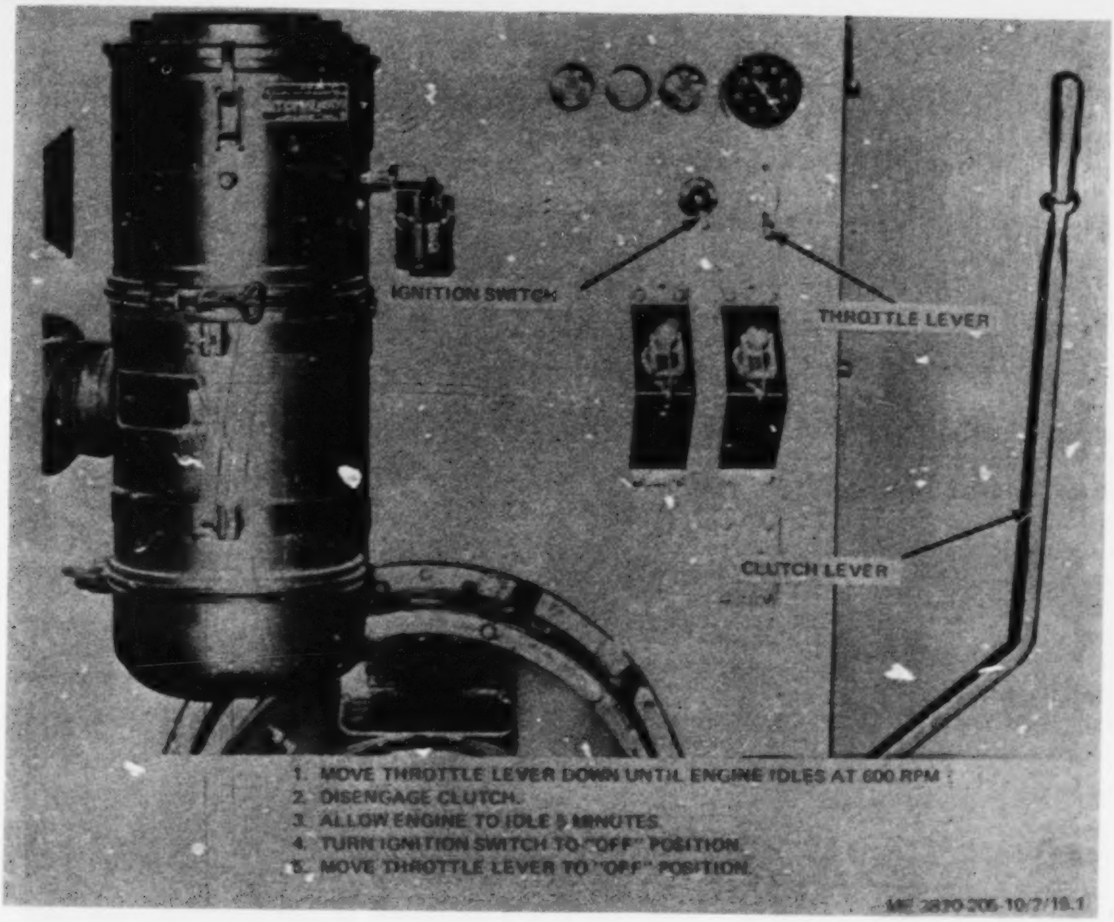
CAUTION: STOP ENGINE IF IGNITION SWITCH FAILS TO RETURN TO "RUN" POSITION AFTER ENGINE STARTS. APPLY LOAD ONLY AFTER COMPLETE ENGINE WARMUP.

NORMAL READINGS	
ENGINE TEMPERATURE	165-185°F
BATT. GEN. INDICATOR	GREEN RANGE
OIL PRESSURE	55-65 PSI
TACHOMETER-HOUR METER	1,740 RPM

ME 3820-205-10/2/14.1

Figure 14.1. Starting the engine (Model 5157B).

Page 31. After figure 15, add figure 15.1.

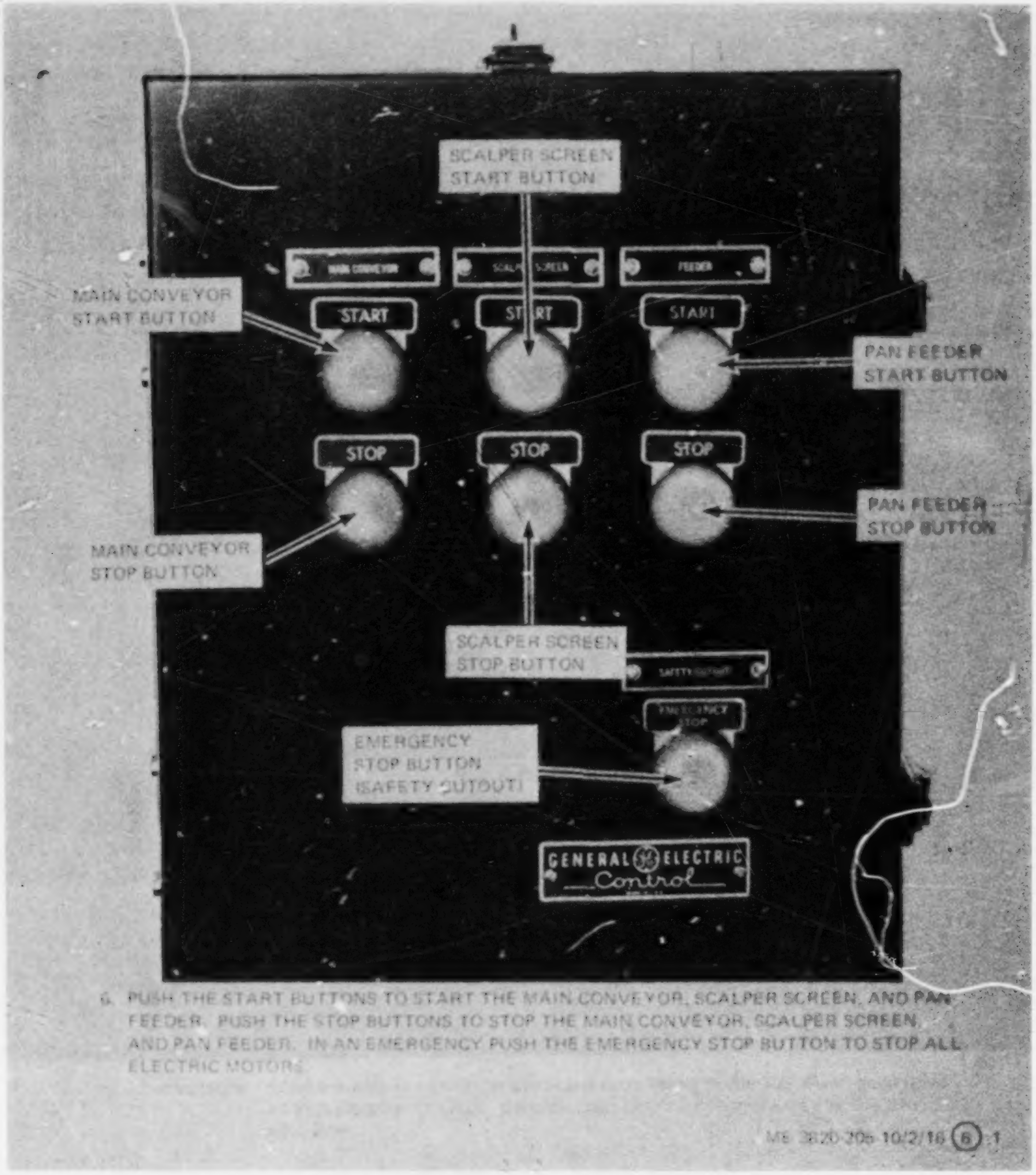

IGNITION SWITCH
THROTTLE LEVER
CLUTCH LEVER

1. MOVE THROTTLE LEVER DOWN UNTIL ENGINE IDLES AT 600 RPM.
2. DISENGAGE CLUTCH.
3. ALLOW ENGINE TO IDLE 5 MINUTES.
4. TURN IGNITION SWITCH TO "OFF" POSITION.
5. MOVE THROTTLE LEVER TO "OFF" POSITION.

ME 2870-205-10/2/15.1

Figure 15.1 Stopping the engine (Model 5157B).

Page 37. After figure 16 (6), add figure 16.1.


SCALPER SCREEN START BUTTON
MAIN CONVEYOR
SCALPER SCREEN
FEEDER
MAIN CONVEYOR START BUTTON
START
START
START
PAN FEEDER START BUTTON
STOP
STOP
STOP
PAN FEEDER STOP BUTTON
MAIN CONVEYOR STOP BUTTON
SCALPER SCREEN STOP BUTTON
SAFETY CUTOUT
EMERGENCY STOP
EMERGENCY STOP BUTTON (SAFETY CUTOUT)
GENERAL ELECTRIC
Control

6. PUSH THE START BUTTONS TO START THE MAIN CONVEYOR, SCALPER SCREEN, AND PAN FEEDER. PUSH THE STOP BUTTONS TO STOP THE MAIN CONVEYOR, SCALPER SCREEN, AND PAN FEEDER. IN AN EMERGENCY PUSH THE EMERGENCY STOP BUTTON TO STOP ALL ELECTRIC MOTORS.

ME 3820-205 10/2/16 ⑥ 1

Figure 16.1. Jaw crusher operation details (Model 5157B).

Page 56. In item 9, "Check to see if red signal is visible" is superseded by "Check if the signal is visible. Also check the precleaner and service it when the level of dirt approaches the arrow indicator on the body."

Page 56. In item 14, line 4, after "2,400 rpm," add "(Model 5157) and 1740 rpm (Model 5157B)."

Page 86. Appendix II is superseded as follows:

APPENDIX II
BASIC ISSUE ITEM LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED

Section I. INTRODUCTION

1. Scope

This appendix lists basic issue items and items troop installed or authorized which accompany the crusher and are required by the crew/operator for operation, installation, or operator's maintenance.

2. General

This basic issue items and items troop installed or authorized list is divided into the following sections:

a. Basic Issue Items List—Section II. Not applicable.

b. Items Troop Installed or Authorized List—Section III. A list in alphabetical sequence of items which, at the discretion of the unit commander, may accompany the end item, but are not subject to be turned in with the end item.

3. Explanation of Columns

The following provides an explanation of columns in the tabular list of items troop installed or authorized, section III.

a. Source, Maintenance, and Recoverability Code(s) (SMR): Not applicable.

b. Federal Stock Number. This column indicates the Federal stock number assigned to the item which will be used for requisitioning purposes.

c. Description. This column indicates the Federal item name and any additional description of the item required.

d. Unit of Measure (U/M). A 2-character alphabetic abbreviation indicating the amount or quantity of the item upon which the allowances are based; e.g., ft, ea, pr; etc.

e. Quantity Authorized. This column indicates the quantity of the item authorized to be used with the equipment.

Section III. ITEMS TROOP INSTALLED OR AUTHORIZED LIST

(1) SMR code	(2) Federal stock number	(3) Description	(4) Unit of meas	(5) Qty auth
	4210-555-8837	EXTINGUISHER, FIRE	EA	1

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:
VERNE L. BOWERS
Major General, United States Army
The Adjutant General

Distribution:
To be distributed in accordance with DA Form 12-25B, (qty rqr block No. 449) Operator Maintenance Requirements for Rock Drilling Equipment.

*TM 5-3820-205-10/2

TECHNICAL MANUAL }
No. 5-3820-205-10/2 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *24 January 1964*

Operator's Manual

CRUSHER, JAW; DIESEL AND ELECTRIC DRIVEN; WHEEL MOUNTED PNEUMATIC TIRES; 75 TON PER HOUR (EAGLE CRUSHER MODEL 5157) FSN 3820-783-7311 COMPONENT OF CRUSHING AND SCREENING PLANT; DIESEL AND ELECTRIC DRIVEN; WHEEL MOUNTED; 75 TON PER HOUR

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* This manual supersedes TM 5-3820-205-10/2, 26 June 1961, including C 1, 27 September 1962, and C 2, 23 May 63.

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1. Scope

a. These instructions are published for the use of the personnel to whom the Eagle Model 5157 Jaw Crusher is issued. They provide information on the operation, lubrication, and preventive maintenance services of the equipment, accessories, components, and attachments.

b. Appendix I contains a list of publications applicable to this manual. Appendix II contains the Basic Issue Items authorized for use by the operator. The Maintenance Allocation Chart is located in TM 5–3820–205–20/2.

c. Numbers in parentheses on illustrations indicate quantity. Numbers preceding nomenclature callouts indicate the preferred maintenance sequence.

d. The direct reporting by the individual user, of errors, omissions and recommendations for improving this manual is authorized and encouraged. DA Form 2028 will be used for reporting these improvements. This form will be completed in triplicate using pencil, pen or typewriter. The original and one copy will be forwarded direct to the Commanding Officer, U. S. Army Mobility Support Center, ATTN: SMOMS–MM, P. O. Box 119, Columbus, Ohio 43216. One information copy will be provided to the individual's immediate supervisor, (e.g., officer, noncommissioned officer, supervisor, etc.).

e. Report all equipment improvement recommendations as prescribed by TM 38–750.

2. Record and Report Forms

For record and report forms applicable to the operator, refer to TM 38–750.

Note. Applicable forms excluding standard Form 46 which is carried by the operator, shall be kept in a canvas bag mounted on the equipment.

Section II. DESCRIPTION AND DATA

3. Description

The Eagle Crusher Model 5157, shown on figures 1 and 2, is a diesel engine driven, moveable jaw-type, primary crushing and screening unit used in quarry rock operation or gravel pit operation in conjunction with other major units. It can also be used by itself to produce fill or base course crusher run material. The crusher is a self-contained unit with the exception that it must be supplied 220/440 volts from a power source to operate the motors that actuate the conveyors and scalper vibrating screen. During operation, the material to be crushed is fed into the pan feeder assembly, shown on figure 1, and is conveyed by the apron to the scalper vibrating screen assembly, shown on figure 2, where it is separated by the grizzly bars and a preselected screen. A two level operator's platform provides access to the operator's control box and engine controls. The basic components are the engine, pan feeder assembly, scalper vibrating screen assembly, discharge conveyor, and the crusher assembly.

4. Aggregate Crushing and Screening Plant

The jaw crusher illustrated on figures 1 and 2 may be a component of a crushing and screening plant. The plant must be set up on firm level ground and as near the source of material to be processed as possible and in position so the conveyors may expel the processed aggre-

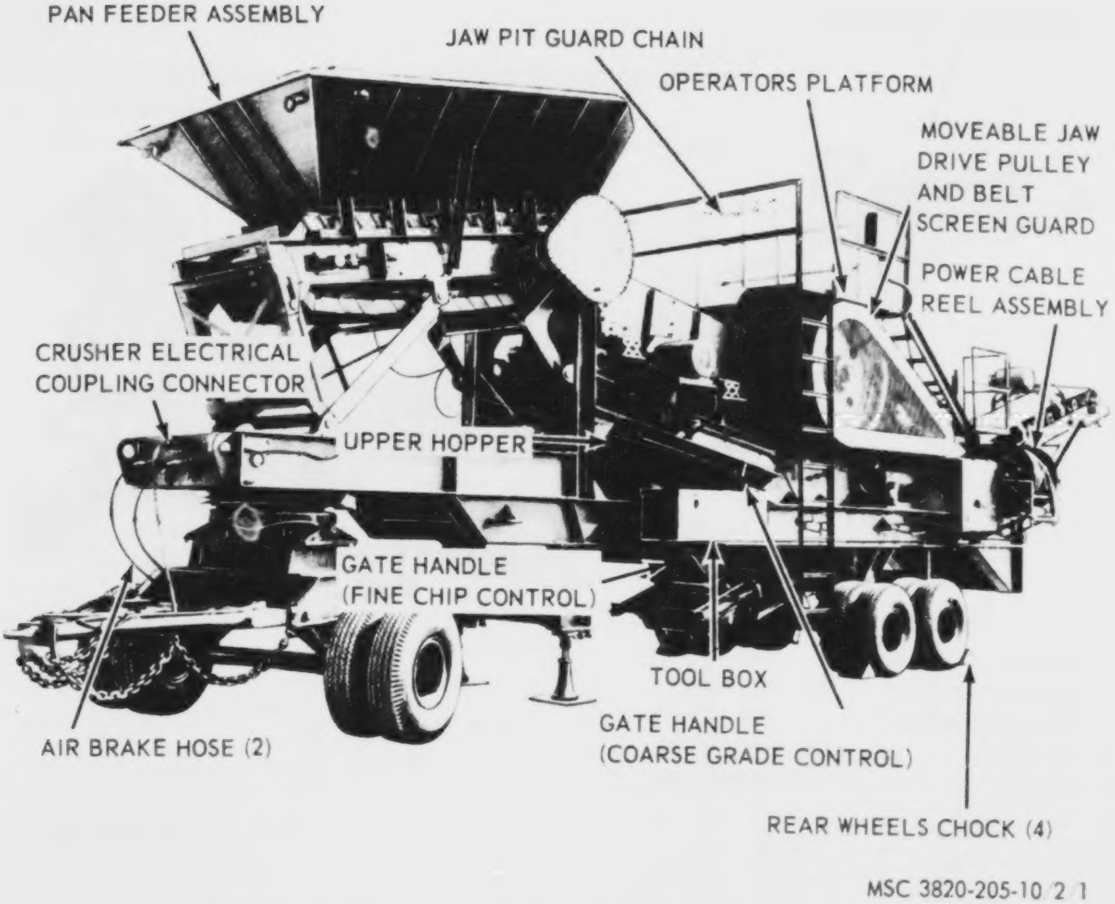

PAN FEEDER ASSEMBLY
JAW PIT GUARD CHAIN
OPERATORS PLATFORM
MOVEABLE JAW DRIVE PULLEY AND BELT SCREEN GUARD
POWER CABLE REEL ASSEMBLY
CRUSHER ELECTRICAL COUPLING CONNECTOR
UPPER HOPPER
GATE HANDLE (FINE CHIP CONTROL)
TOOL BOX
GATE HANDLE (COARSE GRADE CONTROL)
AIR BRAKE HOSE (2)
REAR WHEELS CHOCK (4)
MSC 3820-205-10 2 1

Figure 1. Jaw crusher, left front, three-quarter view.

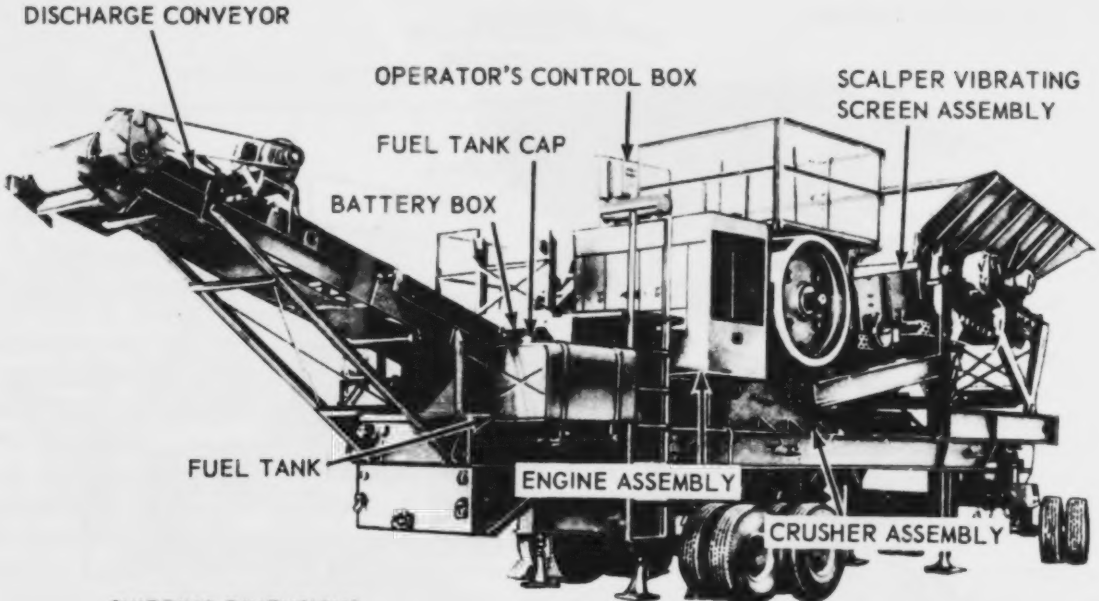
gate to the desired location for stock piling or hauling. Figure 3 illustrates a typical crushing and screening plant layout where the crusher may be utilized as a component. The positions of the various components as shown are not arbitrary, only the relationship to each other is indicated. For example, only the final discharge conveyor is absolutely necessary to operation, the remaining three indicated are illustrated only where the conveyors could be used at the operators and crews discretion. The power source can be either a generator set that will meet the requirements or powerline current. The direction of flow of the aggregate processed is also shown on figure 3.

5. Identification and Tabulated Data

a. Identification. The jaw crusher has 12 identification and instruction plates.

(1) *Corps of Engineers data plate.* The Corps of Engineers data plate is located on the left front of the crusher frame. It gives the description, serial number, manufacturer, model, and dimensions of the jaw crusher.

(2) *Engine identification plate.* The engine identification plate is located on the left side of the engine. This plate gives manufacturer, model, serial number, and operating instructions.



SHIPPING DIMENSIONS

OVERALL LENGTH	489 INCHES
OVERALL WIDTH	108 INCHES
OVERALL HEIGHT	144 INCHES
CUBAGE	4428 CUBIC FEET
WEIGHT	71,400 POUNDS

MSC 3820-205-10/2/2

Figure 2. Jaw crusher, right rear, three-quarter view and shipping dimensions.

(3) *Transportation data plate.* The transportation data plate is located on the left front of the crusher frame. It gives center of gravity, bogie weight, and axle weight.

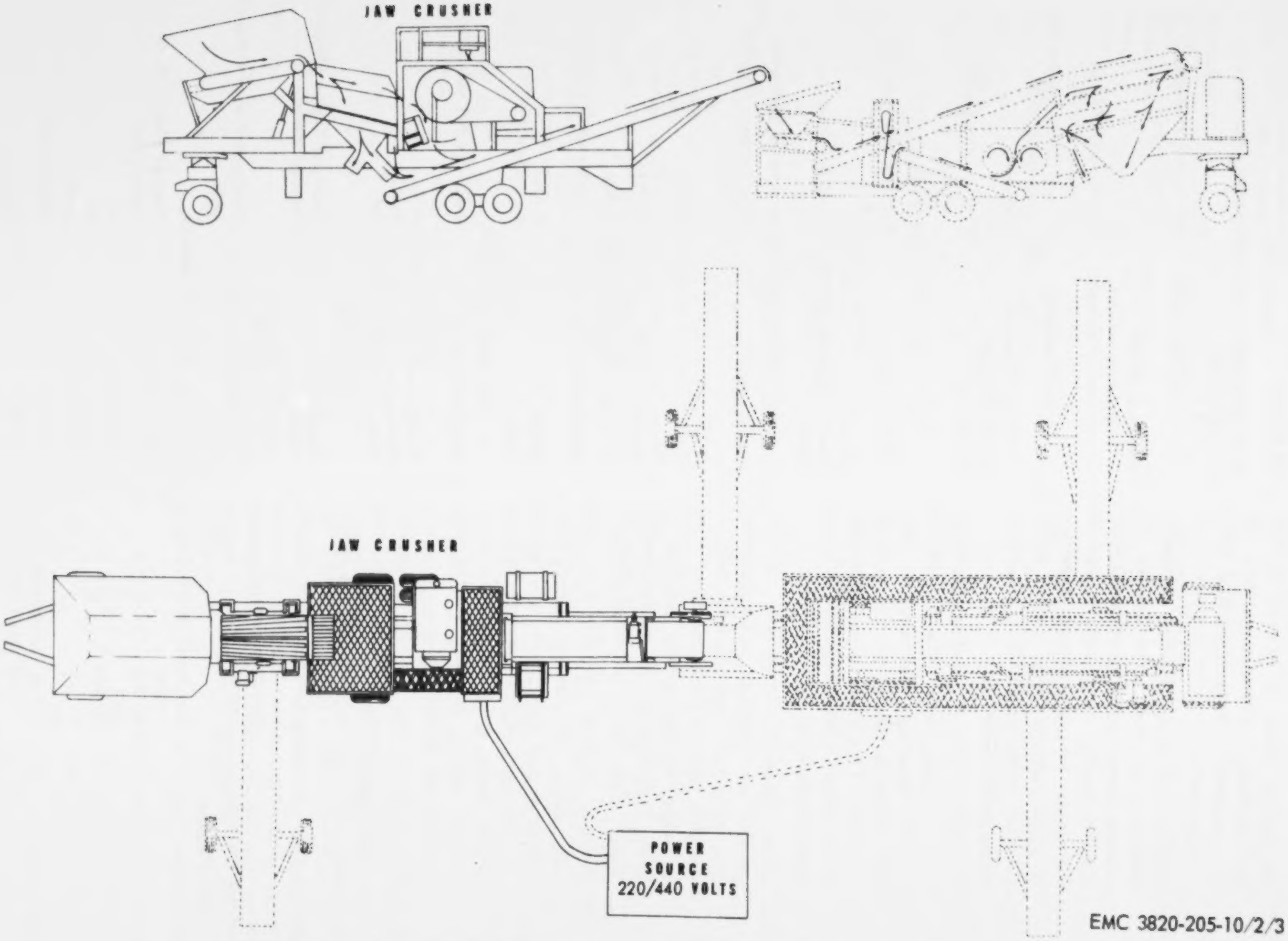
(4) *Power takeoff clutch identification and instruction data plate.* The power takeoff clutch identification and instruction data plate is located on top of the power takeoff housing at the rear of the engine. This plate gives the manufacturer, model, serial number, adjustment, and lubrication instructions.

(5) *Main electrical control panel identification and instruction data plate.* The main electrical control panel identification and instruction data plate is located on the upper left corner of the panel inside the main electrical control box. It gives manufacturer, line volts, phase, cycle, control volts and connection diagram number.

(6) *Trailer identification plate.* The trailer identification plate is located on the left front of the trailer frame. This plate gives information on manufacturer, model, and serial number.

(7) *Dolly identification plate.* The dolly identification plate is located on the front of the dolly frame. It gives the manufacturer, model and serial number.

(8) *Ground rod caution plate.* The ground


JAW CRUSHER
JAW CRUSHER
POWER SOURCE 220/440 VOLTS

EMC 3820-205-10/2/3

Figure 3. Aggregate flow diagram and typical crushing and screening plant layout.

rod caution plate is located on the main electrical control panel box. It gives a caution note regarding suitable grounding.

(9) *Scalper vibrating screen assembly identification plate.* The scalper vibrating screen assembly identification plate is located on the right side of the scalper vibrating screen assembly. It gives manufacturer, model, serial number, speed, lubrication, and operating instructions.

(10) *Pan feeder reducer gearbox identification and data plate.* The pan feeder reducer gearbox identification and data plate is located on the reducer gearbox. This plate gives manufacturer, model, class, ratio and lubrication instructions.

(11) *Main discharge conveyor reducer gearbox identification and data plate.* The main discharge conveyor reducer gearbox identification and data plate is located on the reducer gearbox. It gives information on manufacturer, model, class, ratio, and lubrication.

(12) *Electric motors identification and data plates.* The electric motors identification and data plates are located on the tops of the electric motors. These plates give the manufacturer, model, serial number, horsepower, voltage and amperes.

b. Tabulated Data.

(1) *Jaw crusher.*

Manufacturer	Eagle Crusher Company, Inc.
Model	5157
Type	Jaw
Jaws	20 x 36 in. (inches)
Plant unit function	Primary

(2) *Engine.*

Manufacturer	Continental Motor Corporation.
Model	SD 802
Specification No.	2285
Type	Diesel
Cycles	4
Number of cylinders	6
Rated horsepower	144 hp (horsepower) at 1,400 rpm (revolutions per minute).
Oil pressure	55–65 psi (pounds per square inch).
Brake horsepower	202 hp at 1,800 rpm
Cooling system:	
Type	Liquid
Temperature range	165° to 185° F (degrees) (Fahrenheit).
Electrical system:	
Operating voltage	24 v (volts)
Number of batteries	4 (series-parallel connected).
Type of batteries	Storage, 12 v, 6 cell (type designation 6TN).
Type of ground	Negative
Air cleaner type	Dry
Clutch type	Friction, dry, positive action.

(3) *Jaw crusher assembly.*

Manufacturer	Eagle Crusher Company, Inc.
Model	SK
Size of discharge opening	1½ in. to 5 in.
RPM	225

(4) *Vibroting scalper screen assembly.*

Manufacturer	Allis-Chalmers Manufacturing Co.
Model	S
Type	Ripl-flo
Size	3 x 6 DD
Maximum speed	900 rpm

(5) *Pan feeder assembly.*

Manufacturer	Eagle Crusher Company, Inc.
Model	F–4525
Type	Apron feeder

(6) *Main conveyor.*

Manufacturer	Eagle Crusher Company, Inc.
Model	4526
Type	Belt
Feet per minute	300

(7) *Trailer.*

Manufacturer	Fruehauf Trailer Company
Model	Primary trailers

(8) *Dolly.*

Manufacturer	Fruehauf Trailer Company
Model	5930

(9) *Electric motors.*

Manufacturer	General Electric Corp.
Model	5KG4256B2
Horsepower	10
Cycles	60
RPM FL	1,745
Voltage	208-220/440
Phase	3
Amperes	27.4/13.7

Type	KG
Time rating	Continuous

(10) *Jaw reducer pan feeder assembly.*

Manufacturer	General Electric Corp.
Model	7GT215DONA01
Class	1
Horsepower	16.9 at 1,750 rpm
Ratio	15 to 1
Code	VV

(11) *Gear reducer main conveyor.*

Manufacturer	General Electric Corp.
Model	7GT315FDNA01
Class	1
Horsepower	44.0 at 1,750 rpm
Ratio	15 to 1
Code	NV

(12) *Capacities.*

Air cleaner	Dry
Radiator	70 qt (quarts)
Oil:	
Crankcase air cleaner	1 oz (ounce)
Crankcase only	18 qt
Oil filter	6 qt
Pan feeder:	
Primary gear reduction box.	8 qt
Secondary gear reduction box.	4 qt
Discharge conveyor:	
Gear reduction box	3¾ qt
Pitman	80 lb (pounds)
Fuel tank	100 gal (gallons)
Hydraulic tank (telescopic cylinder retracted).	40 qt
Tires	100 psi

(13) *Dimensions and weights.*

Overall length	480 in.
Overall height	144 in.
Overall width	108 in.
Overall weight	71,400 lb
Cubage	4,428 cu ft (cubic feet)
Wheel base	284 in.

(14) *Adjusting data.*

Fan belts	¾ in. deflection on the long side at a point midway between pulleys.
Movable jaw	1½ in. to 5 in. between low point in vally on one jaw and high point of ridge on other.
Drive component belts:	
Crusher drive belt	1 in. min (minimum) deflection, 3 in. max (maximum) deflection.
Pan feeder drive belt	1 in. deflection
Scalper vibrating screen drive belt.	1 in. deflection
Main conveyor drive belt	1½ in. deflection

(15) *Production tonnage capacity (setting in ratio of capacity).*

1½ in.	30 tph (ton per hour)
2 in.	45 tph
2½ in.	60 tph
3 in.	75 tph
4 in.	120 tph
5 in.	150 tph

(16) *Towing speed.*

Highways	20 mph (miles per hour)
Terrain	10 mph

6. Difference in Models

This manual covers only the Eagle model 5157 jaw crusher, serial number ranges 2050 through 2087 and 2090 through 2129. Where differences exist between the two serial number ranges, each serial number range is covered separately in the applicable maintenance section of this manual. Units within serial number range 2090 through 2129 have two diesel engine air cleaners, units within serial number range 2050 through 2087 have one. Units within serial number range 2090 through 2129 have both coolant temperature and lubricating oil pressure warning lights, but the units within serial number range 2050 through 2087 do not. Units within serial number range 2090 through 2129 are equipped with a dual ignition starter switch, units within serial number range 2050 through 2087 are equipped with a separate switch for the ignition circuit and another switch for the starter energizing circuit.

CHAPTER 2

INSTALLATION AND OPERATION INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF JAW CRUSHER

7. Unloading the Equipment

a. The operator of the jaw crusher may assist in unloading the equipment from the flatcar by helping remove tie-downs, blocking, and strapping securing the equipment to the flatcar.

b. Organizational or higher echelon maintenance personnel are required to perform unloading operations.

8. Inspection and Servicing Equipment

Note. Make sure equipment is completely deprocessed before servicing. Make sure preservatives have been removed from such items as crankcases, fuel tank, gearboxes, and the like.

a. Perform the daily preventive maintenance services listed in paragraph 31.

b. Make a complete visual inspection to see that the required tools, repair parts, publications, accessories, and attachments are with the jaw crusher and are in serviceable condition.

c. Visually inspect the entire jaw crusher for loss of parts or damage which may have occurred during loading, shipment, or unloading.

d. Inspect brake hoses, electric cables, and wiring for breaks, cuts, damaged or missing connections, and hardware.

e. Check tires for proper inflation of 100 psi. Inspect tires for cuts, breaks, or other damage.

f. Inspect all lights for proper operation.

g. Report all damage and missing parts to organizational maintenance.

9. Installation or Setting-Up Instructions

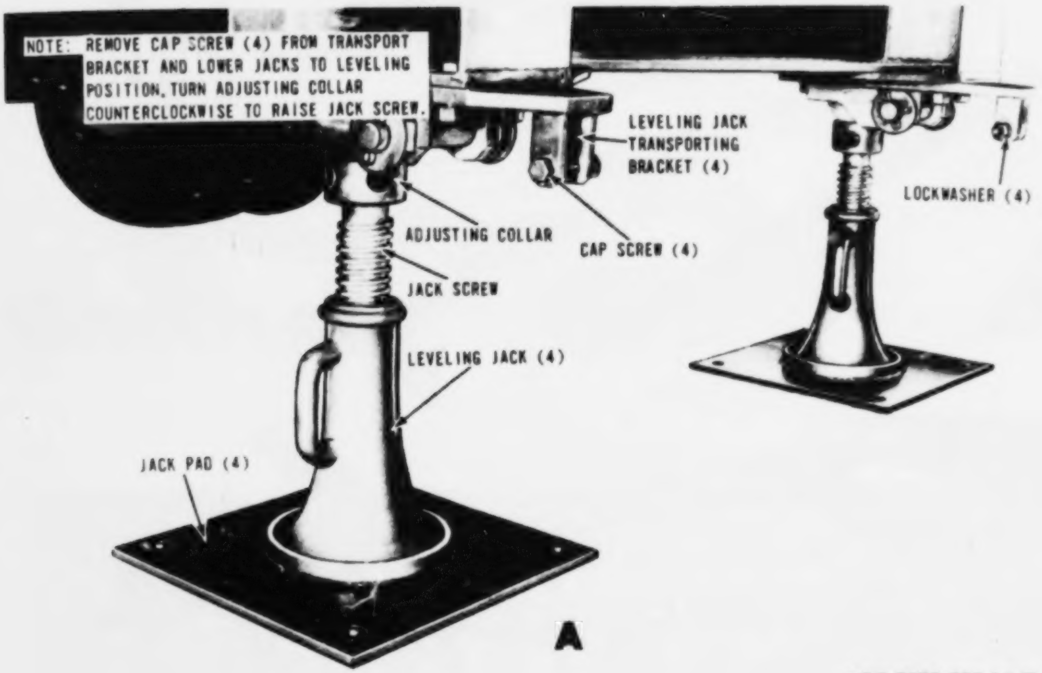
a. Locate the jaw crusher on a flat or leveled surface. If necessary, use any suitable equipment such as a bulldozer, to level the site. Plan the site so there will be no obstructions to trucks or other hauling vehicles going to and from the plant. Refer to figure 3 for suggested placement of plant components. After the crusher is located, level the area immediately under the crusher frame for cribbing.

b. Remove the wheel chocks from their brackets on the main frame above the rear wheel and securely block the rear wheels as illustrated on figure 1.

c. The crusher is equipped with mounted, screw-type leveling jacks. Position the jacks in the jack pads as instructed on figure 4. If the ground is soft or provides a poor bearing surface, place timbers or other suitable supports under the jack pads.

d. Level the trailer frame lengthwise. Check in several places to avoid having a twist or sag in the frame, adjust the jacks accordingly to prevent this. Level the trailer crosswise at the front and rear of the plant. Accuracy in leveling is very important because a twist in a plant improperly leveled, may cause the drive belts and conveyor belts to run off the pulleys, material to travel to one side of the screen, and the rubber mountings of the vibrating screen to twist. To place the cribbing, raise the front end of the crusher by turning the front screw jacks until the frame is level. Then build the cribbing solidly up to the frame and screw the jacks back a few turns allowing the weight to rest on the cribbing. Crib the rear axles in the same manner.

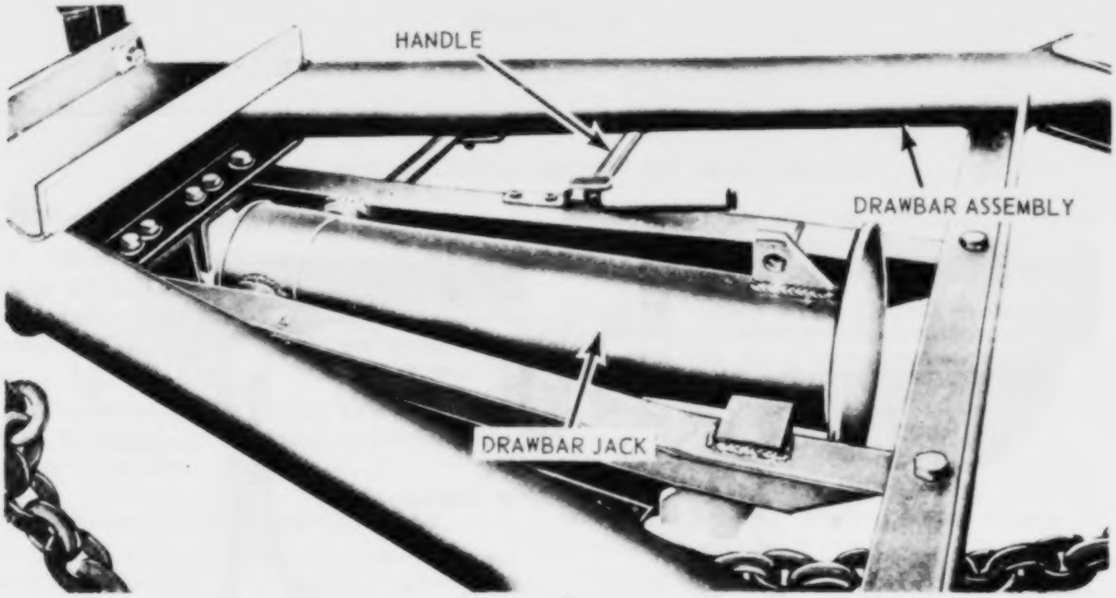
e. Raise and secure the pan feeder and knee brace in operating position as instructed on figure 5.


NOTE: REMOVE CAP SCREW (4) FROM TRANSPORT BRACKET AND LOWER JACKS TO LEVELING POSITION, TURN ADJUSTING COLLAR COUNTERCLOCKWISE TO RAISE JACK SCREW.
LEVELING JACK TRANSPORTING BRACKET (4)
LOCKWASHER (4)
ADJUSTING COLLAR
CAP SCREW (4)
JACK SCREW
LEVELING JACK (4)
JACK PAD (4)
A

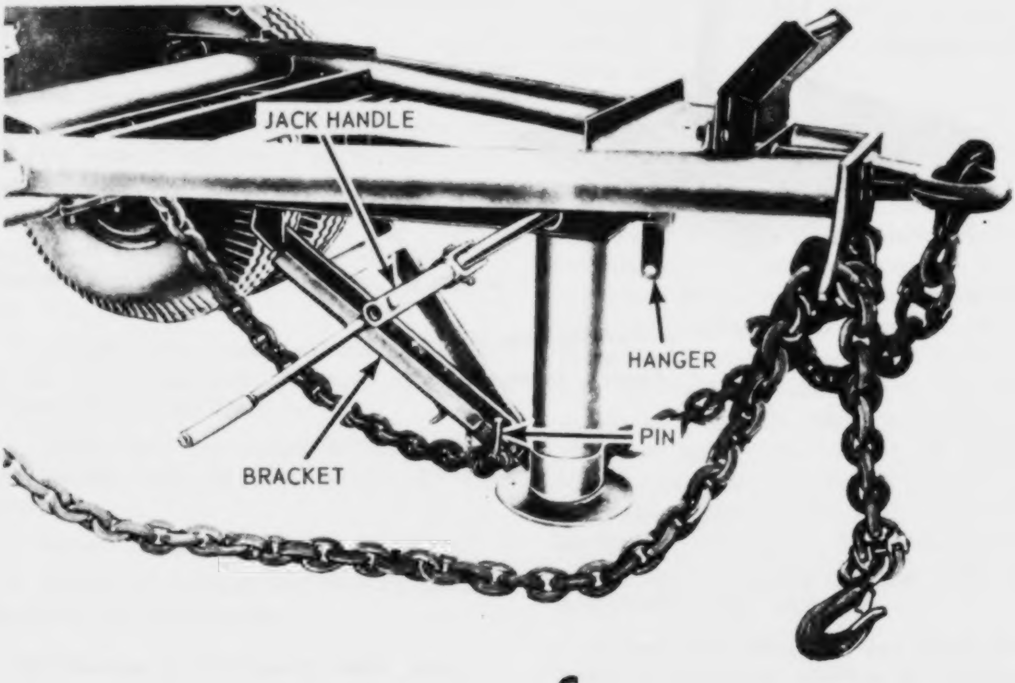
MSC 3820-205-10/2/4 ①

A—Leveling jacks, installed.

Figure 4. Leveling jacks.


HANDLE
DRAWBAR ASSEMBLY
DRAWBAR JACK

B

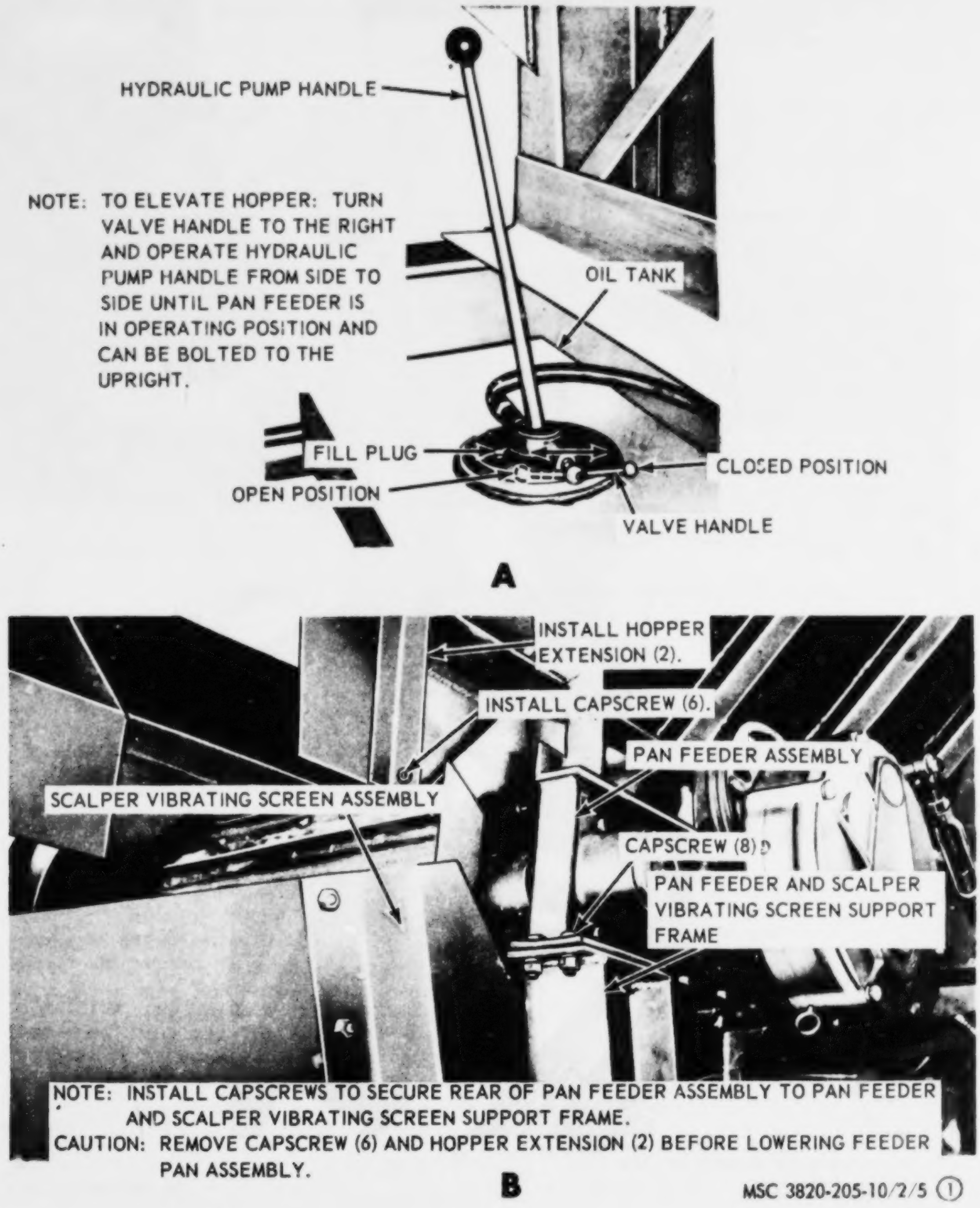

JACK HANDLE
HANGER
PIN
BRACKET

C

MSC 3820-205-10/1/4 ②

B—Drawbar leveling jack, stowed position, Serial numbers 2090 through 2129.
C—Drawbar leveling jack, installed position, Serial numbers 2090 through 2129.

Figure 4—Continued.


HYDRAULIC PUMP HANDLE
OIL TANK
FILL PLUG
CLOSED POSITION
OPEN POSITION
VALVE HANDLE
A
INSTALL HOPPER EXTENSION (2).
INSTALL CAPSCREW (6).
PAN FEEDER ASSEMBLY
SCALPER VIBRATING SCREEN ASSEMBLY
CAPSCREW (8)
PAN FEEDER AND SCALPER VIBRATING SCREEN SUPPORT FRAME
B
MSC 3820-205-10/2/5 ①

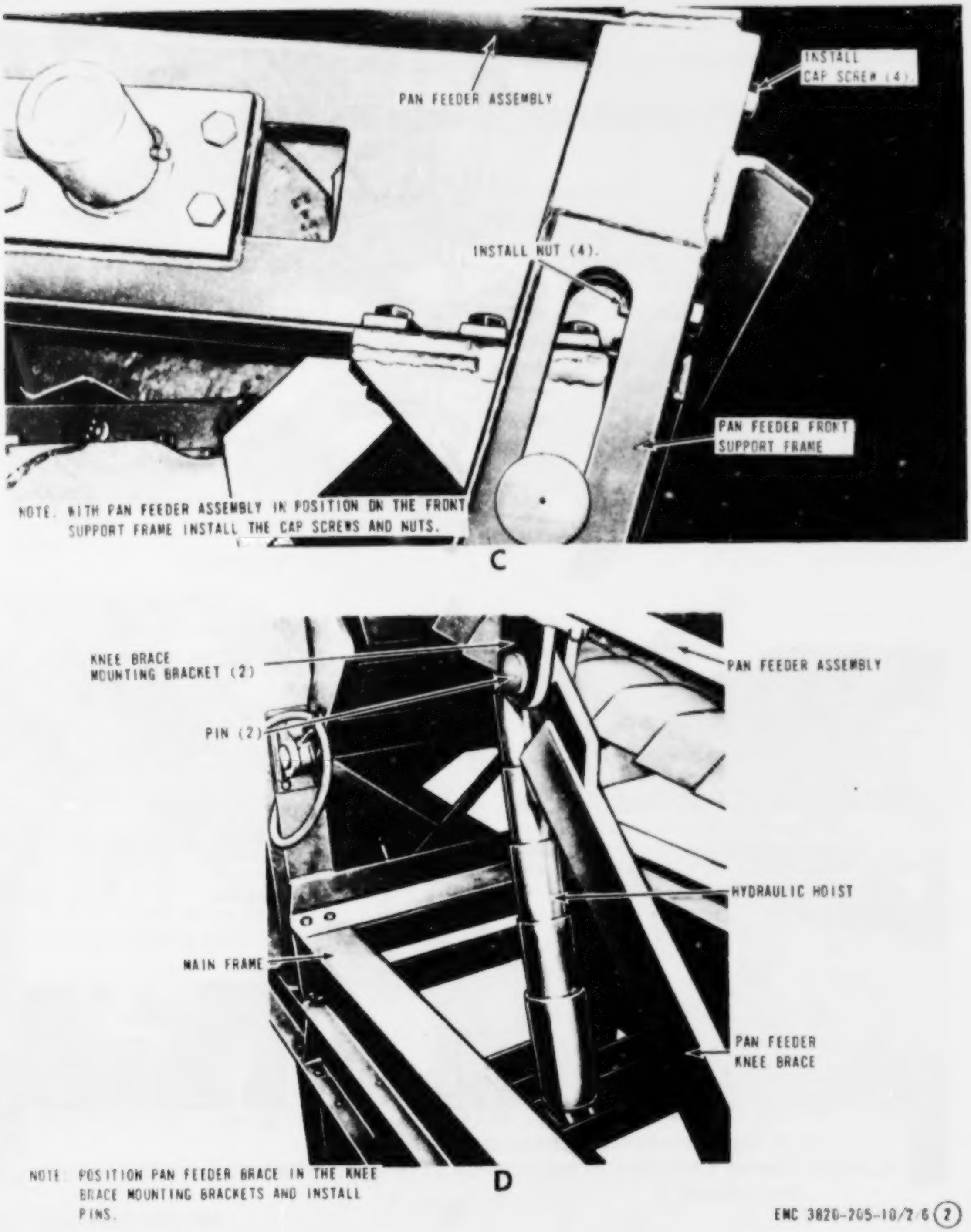
NOTE: TO ELEVATE HOPPER: TURN VALVE HANDLE TO THE RIGHT AND OPERATE HYDRAULIC PUMP HANDLE FROM SIDE TO SIDE UNTIL PAN FEEDER IS IN OPERATING POSITION AND CAN BE BOLTED TO THE UPRIGHT.

NOTE: INSTALL CAPSCREWS TO SECURE REAR OF PAN FEEDER ASSEMBLY TO PAN FEEDER AND SCALPER VIBRATING SCREEN SUPPORT FRAME.

CAUTION: REMOVE CAPSCREW (6) AND HOPPER EXTENSION (2) BEFORE LOWERING FEEDER PAN ASSEMBLY.

A—Hydraulic pump. **B—Pan feeder rear support.**

Figure 5. Pan feeder installation.


PAN FEEDER ASSEMBLY
INSTALL CAP SCREW (4).
INSTALL NUT (4).
PAN FEEDER FRONT SUPPORT FRAME
C
KNEE BRACE MOUNTING BRACKET (2)
PIN (2)
PAN FEEDER ASSEMBLY
HYDRAULIC HOIST
MAIN FRAME
PAN FEEDER KNEE BRACE
D
EMC 3820-205-10/2/6 (2)

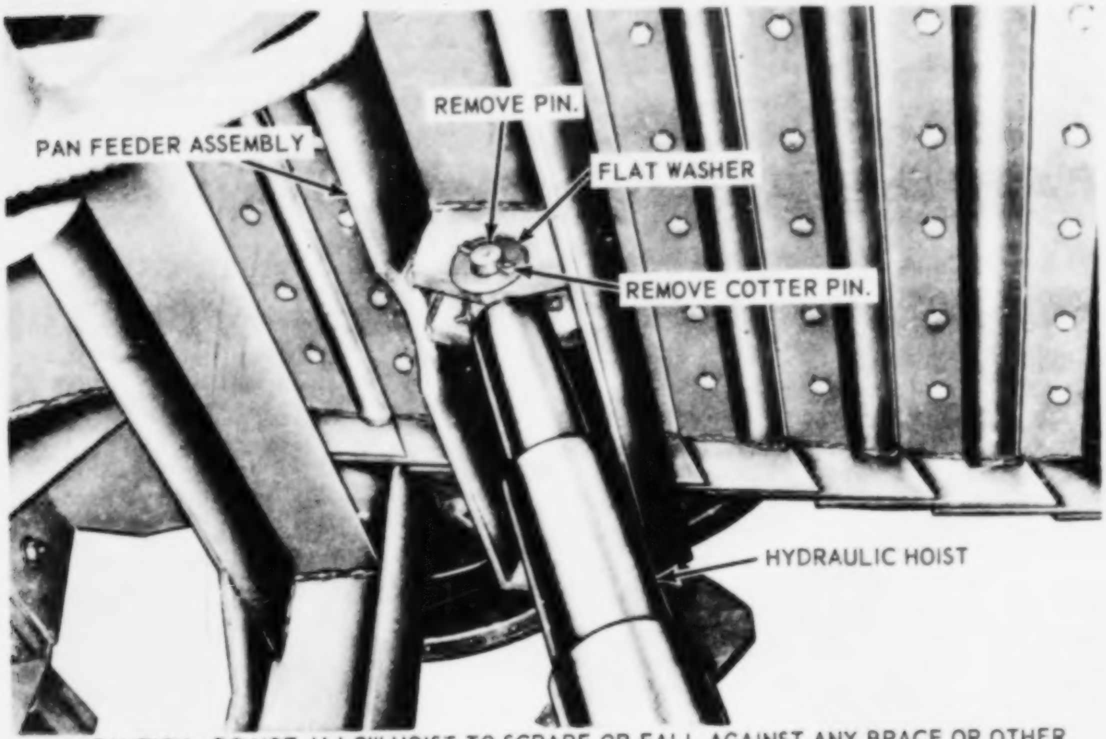
NOTE: WITH PAN FEEDER ASSEMBLY IN POSITION ON THE FRONT SUPPORT FRAME INSTALL THE CAP SCREWS AND NUTS.

NOTE: POSITION PAN FEEDER BRACE IN THE KNEE BRACE MOUNTING BRACKETS AND INSTALL PINS.

C—Pan feeder front support. D—Pan feeder knee braces.

Figure 5—Continued.

f. Disconnect the hydraulic hoist from the pan feeder as instructed on figure 6. Turn the valve handle on the hydraulic pump counterclockwise to the OPEN position (fig. 5A) and allow the hydraulic hoist to return to the lowered position.

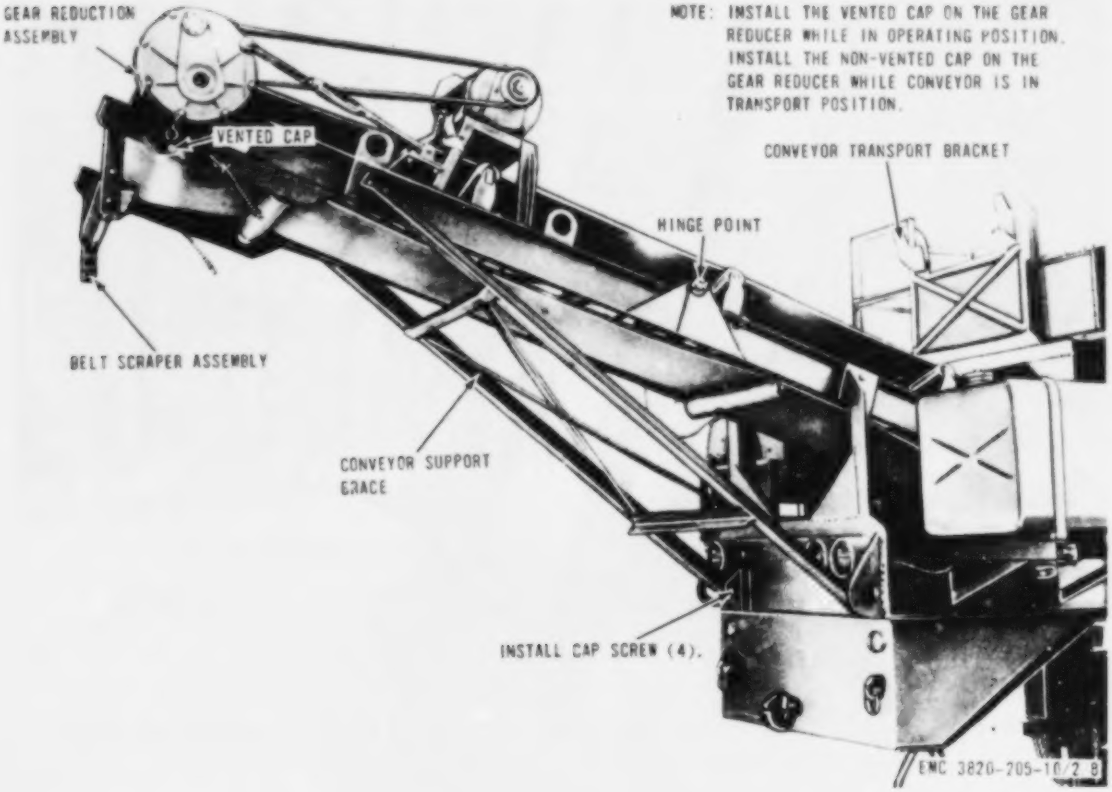

REMOVE PIN.
PAN FEEDER ASSEMBLY
FLAT WASHER
REMOVE COTTER PIN.
HYDRAULIC HOIST

CAUTION: DO NOT ALLOW HOIST TO SCRAPE OR FALL AGAINST ANY BRACE OR OTHER ITEM WHILE BEING LOWERED.

MSC 3820-205-10/2/6

Figure 6. Hydraulic hoist, installed view.

g. Use a suitable lifting device and lift the discharge conveyor into operating position as illustrated on figure 7. Install the discharge conveyor support frame and head belt scraper as instructed on figures 7 and 8. Adjust main conveyor drive belt (par. 77).


GEAR REDUCTION ASSEMBLY
VENTED CAP
BELT SCRAPER ASSEMBLY
CONVEYOR SUPPORT BRACE
HINGE POINT
CONVEYOR TRANSPORT BRACKET
INSTALL CAP SCREW (4).
EMC 3820-205-10/2 8

NOTE: INSTALL THE VENTED CAP ON THE GEAR REDUCER WHILE IN OPERATING POSITION. INSTALL THE NON-VENTED CAP ON THE GEAR REDUCER WHILE CONVEYOR IS IN TRANSPORT POSITION.

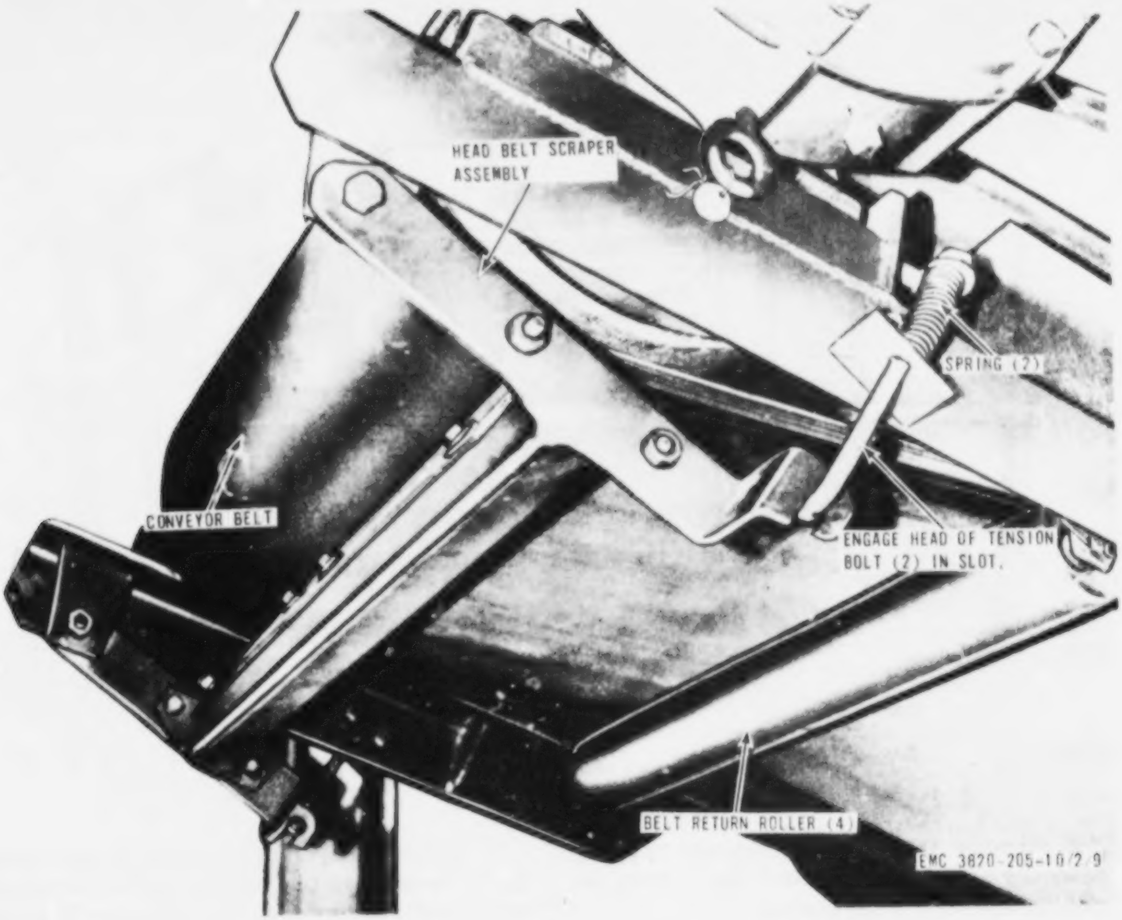

HEAD BELT SCRAPER ASSEMBLY
SPRING (2)
CONVEYOR BELT
ENGAGE HEAD OF TENSION BOLT (2) IN SLOT.
BELT RETURN ROLLER (4)
EMC 3820-205-10/2/9

Figure 8. Head belt scraper, installed view.

h. Raise and secure the operator's platform guardrails as instructed on figure 9.

i. Remove the jaw pit guard and chain from the toolbox (fig. 1) and install on operator's platform (fig. 9).

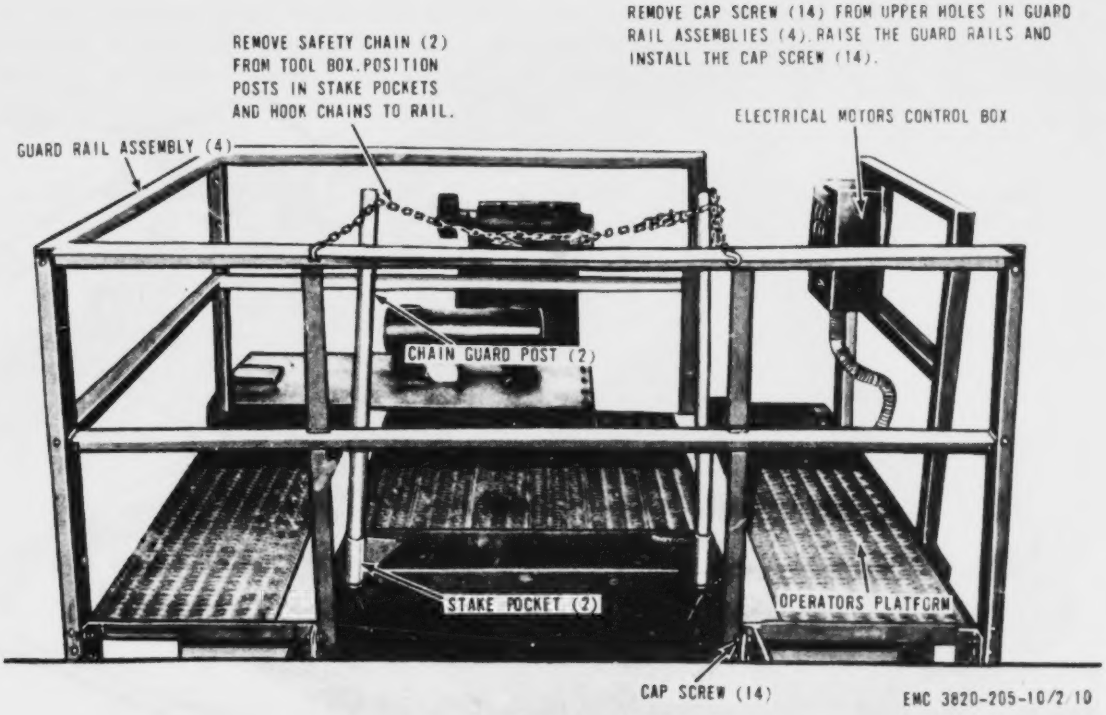
j. The vibrating screen for the crusher is available with one-half inch mesh or three-quarter inch mesh. Should the screen that is installed in the crusher be of the wrong mesh for initial operation, refer to paragraph 71 for screen removal and installation.

k. The crusher jaws can be adjusted from 1½ to 3 in. opening. The opening is measured between the jaws from the lowest point in the valley between the ridges on one jaw to the highest point on the ridge of the opposite jaw. The measurement must be taken at the lower opening between jaws. To adjust the jaws, refer to paragraph 70.

l. Remove the ground rod assemblies from the toolbox (fig. 1) and assemble the rod. Attach one end of the ground cable to the clip on the rod, and the other end of the ground cable securely to a point on the jaw crusher frame as instructed on figure 10.

Warning: **Make certain the jaw crusher and the source of power are properly grounded before installing the main power cable.**

m. Remove the main power cable from the cable reel assembly (fig. 1) and install on the electrical control box as instructed on figure 11.



REMOVE CAP SCREW (14) FROM UPPER HOLES IN GUARD RAIL ASSEMBLIES (4). RAISE THE GUARD RAILS AND INSTALL THE CAP SCREW (14).
REMOVE SAFETY CHAIN (2) FROM TOOL BOX. POSITION POSTS IN STAKE POCKETS AND HOOK CHAINS TO RAIL.
GUARD RAIL ASSEMBLY (4)
ELECTRICAL MOTORS CONTROL BOX
CHAIN GUARD POST (2)
STAKE POCKET (2)
OPERATORS PLATFORM
CAP SCREW (14)
EMC 3820-205-10/2 10

Figure 9. Operator's platform guardrails, installed view.

n. Remove the crusher electrical coupling connector and air brake hoses (fig. 1) from the crusher and stow in the toolbox.

10. Movement to A New Work Site

a. Remove the power cable from the electrical control panel (fig. 11) and wind power cable on the power cable reel assembly (fig. 1).

b. Remove the ground rod assembly (fig. 10) and stow them in the toolbox (fig. 1).

c. Remove necessary mounting hardware from the operator's platform guardrails (fig. 9) to permit the guardrails to be lowered to the transport position as illustrated on figure 12.

d. Remove the tension from the head belt scraper illustrated on figure 8 and position the discharge conveyor in the transport cradle illustrated on figure 12.

e. Install the hydraulic hoist on the pan feeder in reverse of the instructions on figure 6 and lower the feeder to the transport position (fig. 12) in reverse of the instructions on figure 5 ①.

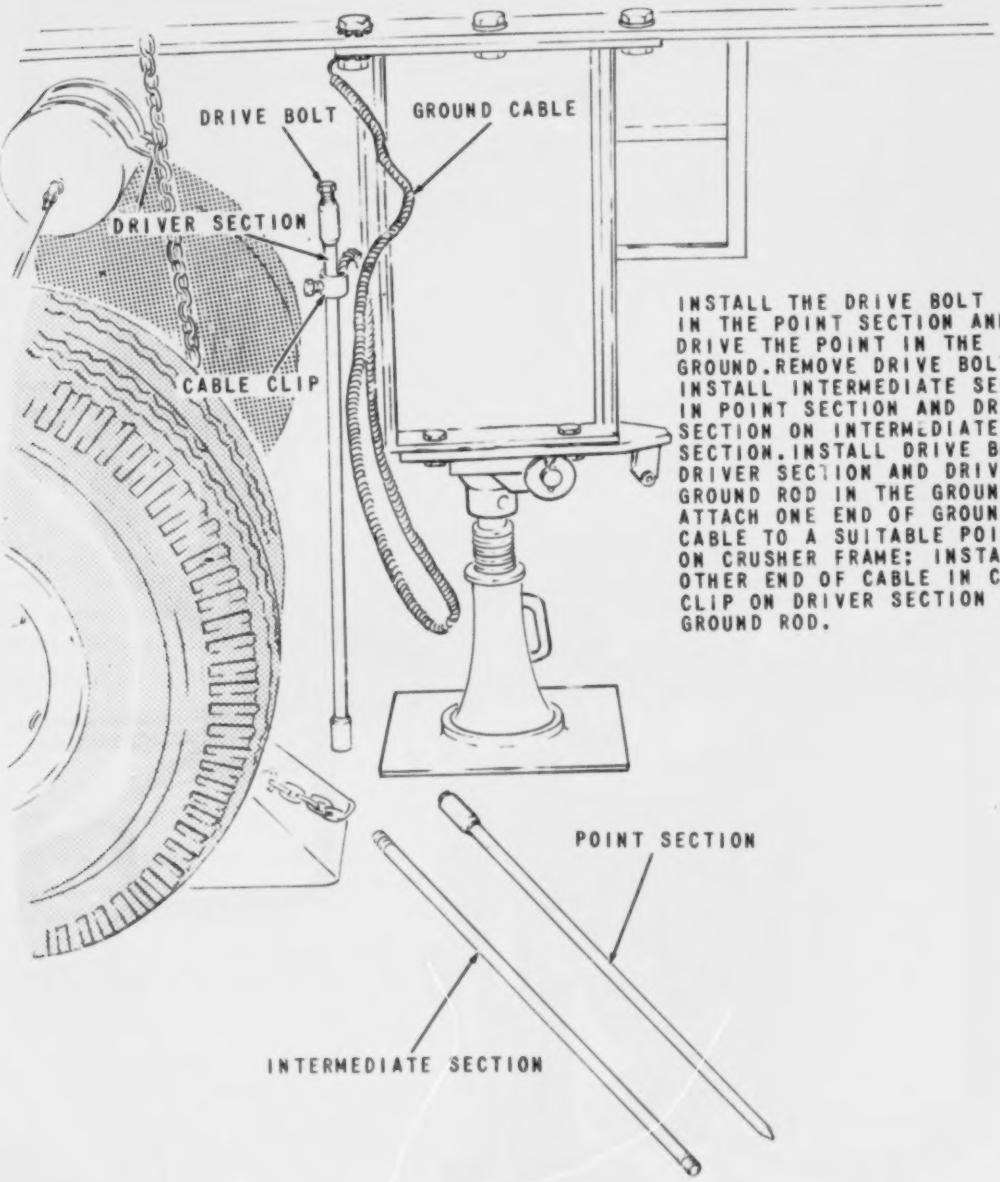
f. Raise and secure the leveling jacks in transport position in reverse of instruction in paragraph 9*c*, and stow jack pads in the toolbox.

g. Remove crusher electric cable connector and air brake hoses from the toolbox and install on crusher (fig. 1).

h. Attach suitable towing vehicle to the jaw crusher, remove the wheel chock (fig. 1) and stow them in the bracket on the frame as illustrated on figure 12.

Caution: **Do not exceed 20 mph on good hard surface road or 10 mph on secondary roads or across country when towing the jaw crusher.**

NOTE: USE INTERNAL-EXTERNAL TOOTH WASHERS FOR SECURING GROUND ROD ASSEMBLY TO CRUSHER FRAME.


DRIVE BOLT
GROUND CABLE
DRIVER SECTION
CABLE CLIP
POINT SECTION
INTERMEDIATE SECTION
EMC 3820-205-10/2/11

INSTALL THE DRIVE BOLT IN THE POINT SECTION AND DRIVE THE POINT IN THE GROUND. REMOVE DRIVE BOLT. INSTALL INTERMEDIATE SECTION IN POINT SECTION AND DRIVE SECTION ON INTERMEDIATE SECTION. INSTALL DRIVE BOLT IN DRIVER SECTION AND DRIVE GROUND ROD IN THE GROUND. ATTACH ONE END OF GROUND CABLE TO A SUITABLE POINT ON CRUSHER FRAME: INSTALL OTHER END OF CABLE IN CABLE CLIP ON DRIVER SECTION OF GROUND ROD.

Figure 10. Ground rod assembly, installation.

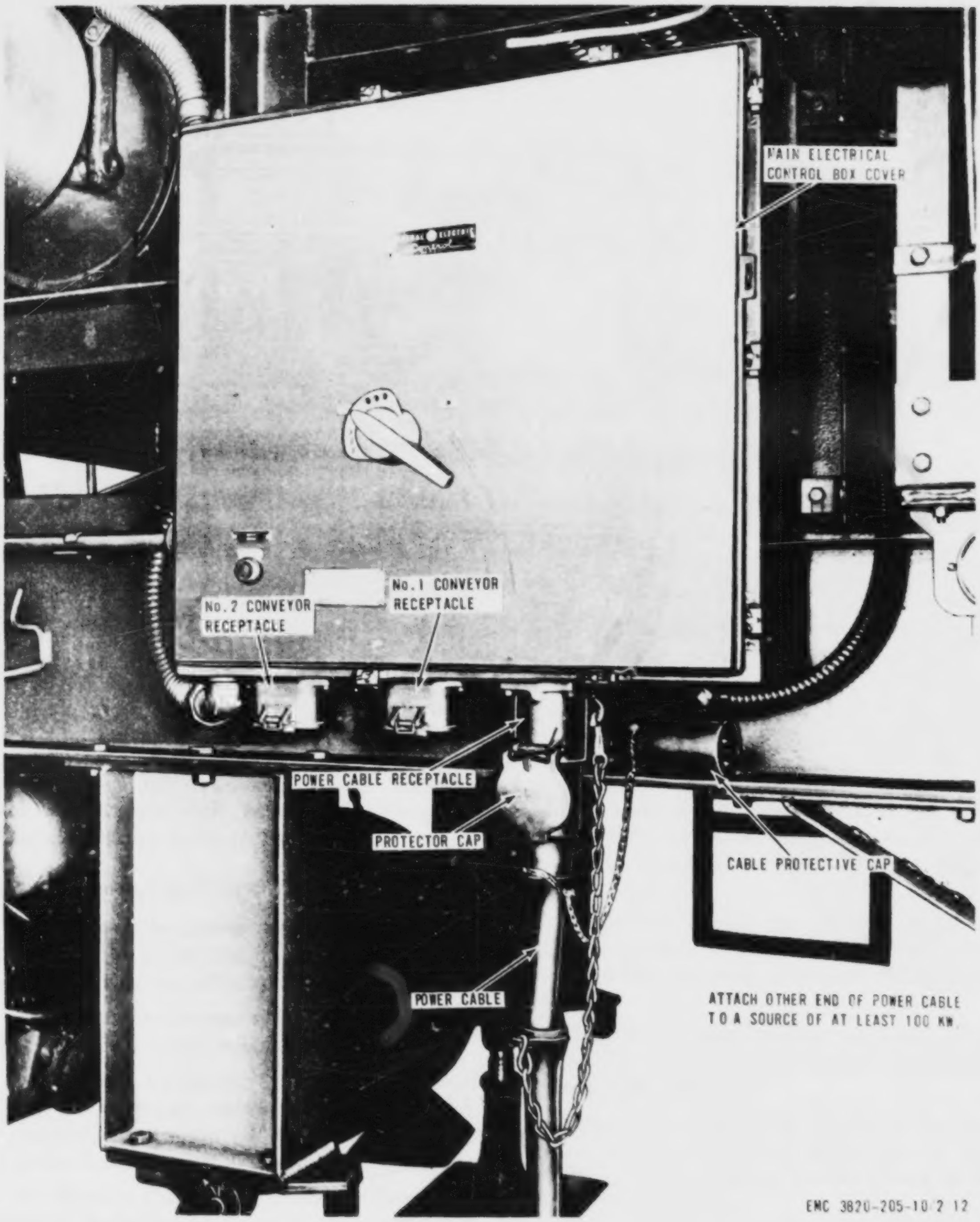
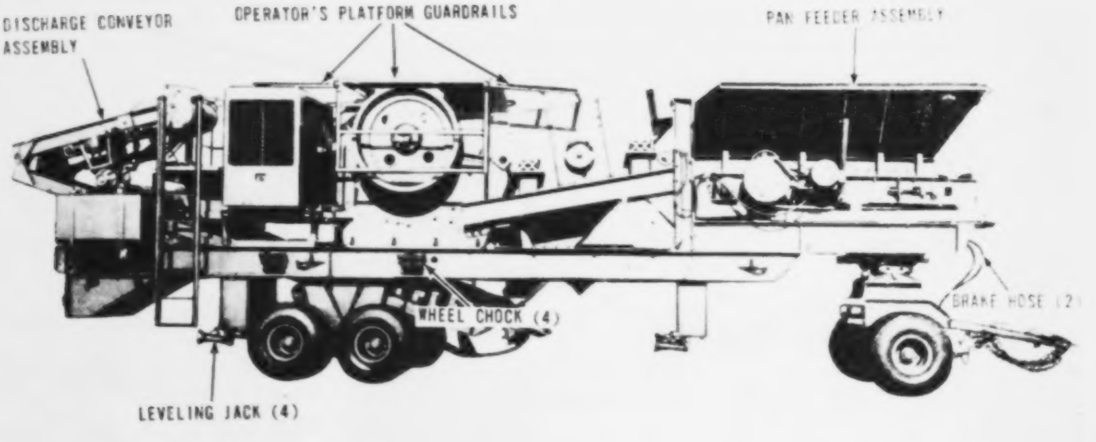

MAIN ELECTRICAL CONTROL BOX COVER
No. 1 CONVEYOR RECEPTACLE
No. 2 CONVEYOR RECEPTACLE
POWER CABLE RECEPTACLE
PROTECTOR CAP
CABLE PROTECTIVE CAP
POWER CABLE
ATTACH OTHER END OF POWER CABLE TO A SOURCE OF AT LEAST 100 KW.
EMC 3820-205-10/2 12

Figure 11. Power cable, installed view.


DISCHARGE CONVEYOR ASSEMBLY
OPERATOR'S PLATFORM GUARDRAILS
PAN FEEDER ASSEMBLY
WHEEL CHOCK (4)
BRAKE HOSE (2)
LEVELING JACK (4)

EMC 3820-205-10/2/13

Figure 12. Jaw crusher prepared for transport.

i. If the movement to the new work site is a short distance and the equipment could be safely towed over existing roads and bridges with sufficient safe clearances, it is not necessary to perform all of the above operations for transporting the jaw crusher to its new work site Follow the instructions in subparagraphs *a*, *b*, *f*, *g*, and *h* above for this type move.

j. Refer to setting-up instructions in paragraph 9 for reinstallation instructions.

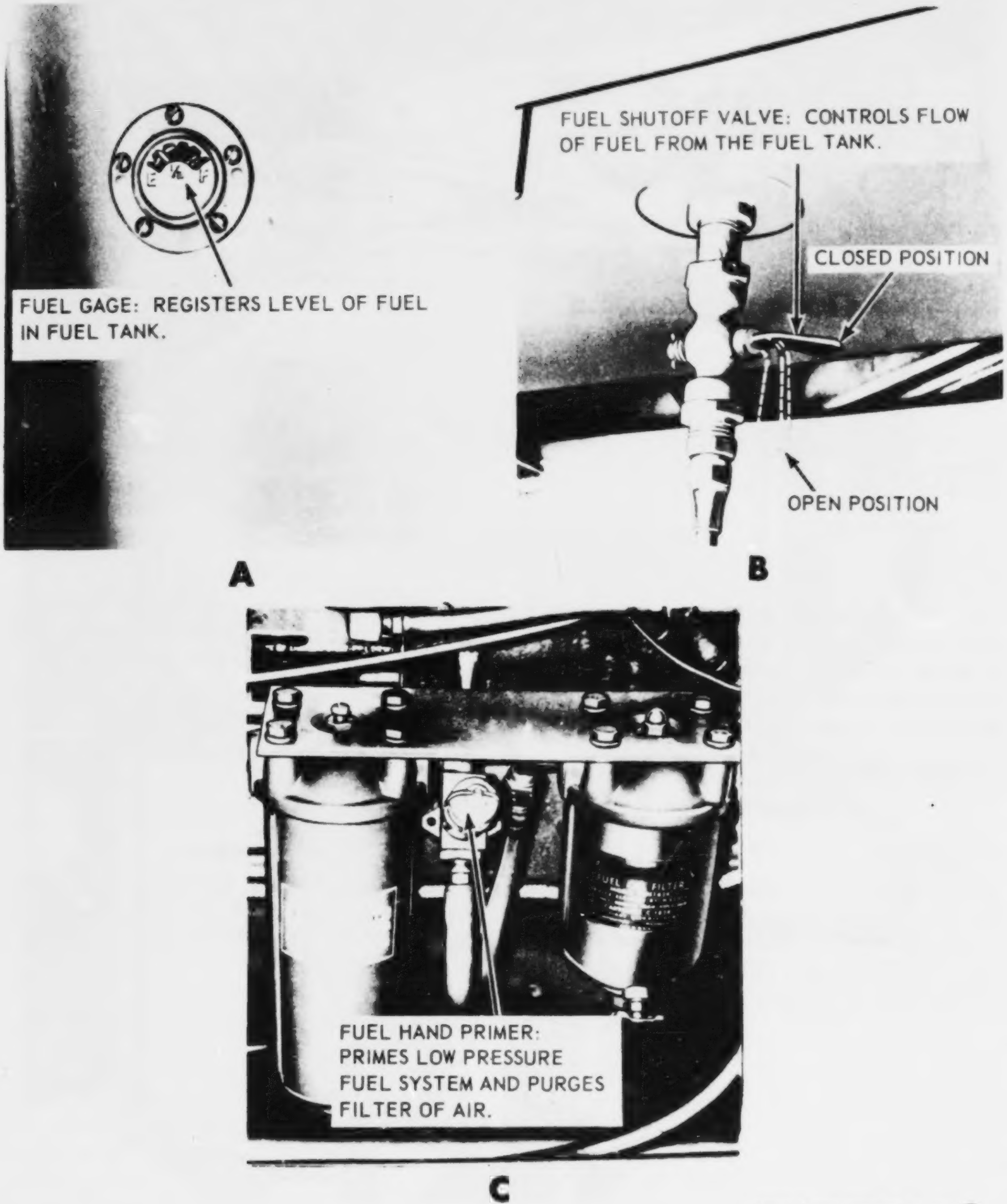
Section II. CONTROLS AND INSTRUMENTS

11. General

This section describes, locates, illustrates, and furnishes the operator, crew, or driver sufficient information about the various controls and instruments for proper operation of the jaw crusher.

12. Controls and Instruments

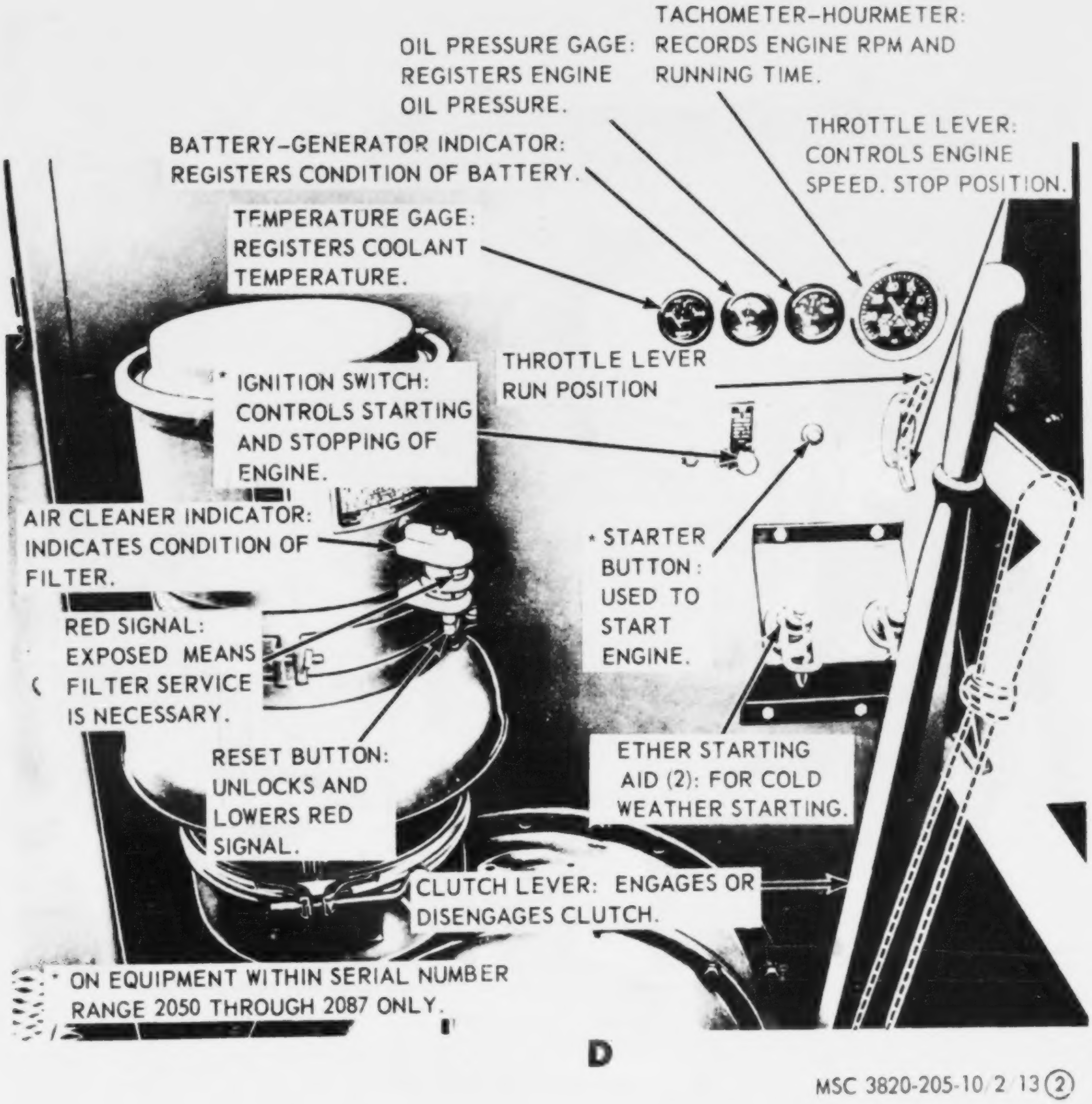
The purpose, location, and use of the controls and normal readings of the instruments and gages are illustrated on figure 13.


FUEL GAGE: REGISTERS LEVEL OF FUEL IN FUEL TANK.
A
FUEL SHUTOFF VALVE: CONTROLS FLOW OF FUEL FROM THE FUEL TANK.
CLOSED POSITION
OPEN POSITION
B
FUEL HAND PRIMER: PRIMES LOW PRESSURE FUEL SYSTEM AND PURGES FILTER OF AIR.
C

MSC 3820-205-10/2/13 ①

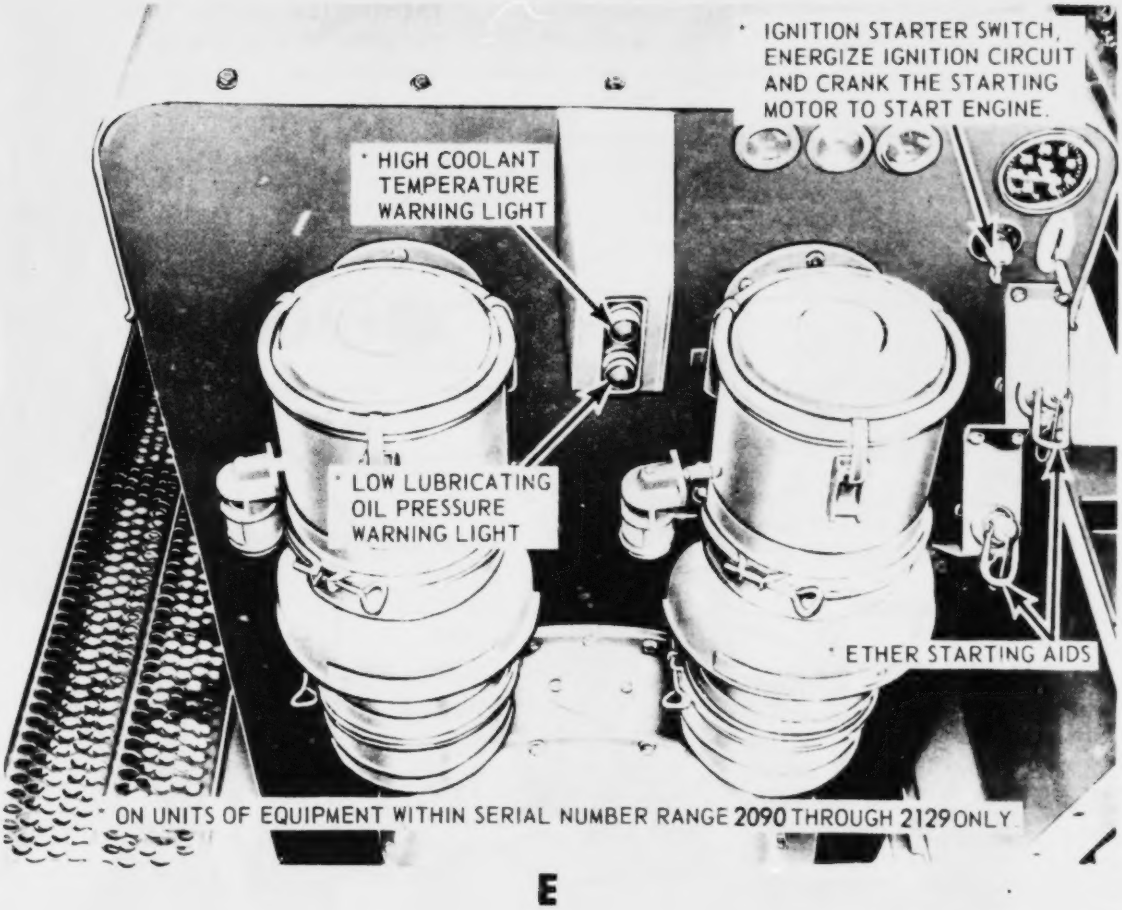
A—Fuel gage.
B—Fuel shutoff valve.
C—Fuel hand primer.

Figure 13. Controls and instruments.


TACHOMETER-HOURMETER: RECORDS ENGINE RPM AND RUNNING TIME.
OIL PRESSURE GAGE: REGISTERS ENGINE OIL PRESSURE.
THROTTLE LEVER: CONTROLS ENGINE SPEED. STOP POSITION.
BATTERY-GENERATOR INDICATOR: REGISTERS CONDITION OF BATTERY.
TEMPERATURE GAGE: REGISTERS COOLANT TEMPERATURE.
THROTTLE LEVER RUN POSITION
* IGNITION SWITCH: CONTROLS STARTING AND STOPPING OF ENGINE.
AIR CLEANER INDICATOR: INDICATES CONDITION OF FILTER.
* STARTER BUTTON: USED TO START ENGINE.
RED SIGNAL: EXPOSED MEANS FILTER SERVICE IS NECESSARY.
RESET BUTTON: UNLOCKS AND LOWERS RED SIGNAL.
ETHER STARTING AID (2): FOR COLD WEATHER STARTING.
CLUTCH LEVER: ENGAGES OR DISENGAGES CLUTCH.
* ON EQUIPMENT WITHIN SERIAL NUMBER RANGE 2050 THROUGH 2087 ONLY.
D
MSC 3820-205-10/2/13 ②

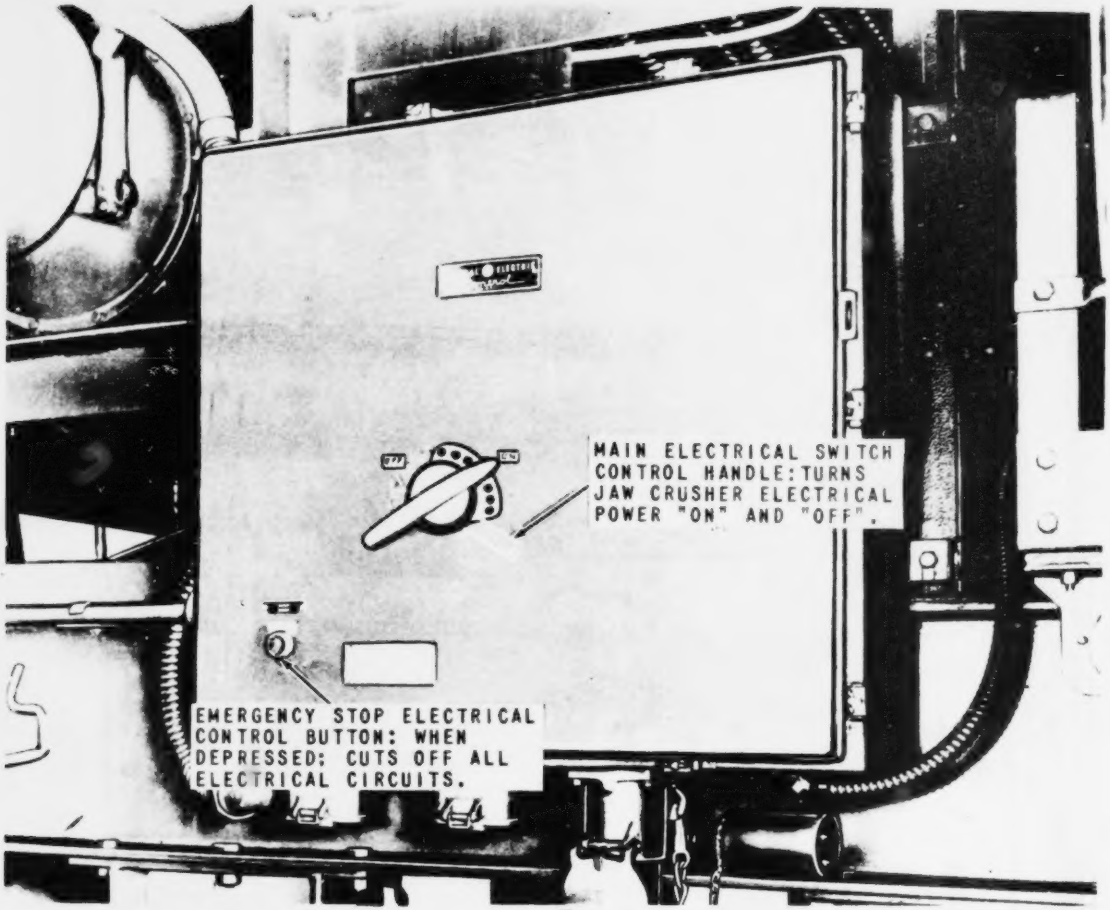
D—Engine instrument panel.

Figure 13—Continued.


* IGNITION STARTER SWITCH, ENERGIZE IGNITION CIRCUIT AND CRANK THE STARTING MOTOR TO START ENGINE.
* HIGH COOLANT TEMPERATURE WARNING LIGHT
* LOW LUBRICATING OIL PRESSURE WARNING LIGHT
* ETHER STARTING AIDS
* ON UNITS OF EQUIPMENT WITHIN SERIAL NUMBER RANGE 2090 THROUGH 2129 ONLY
E
MSC 3820-205-10/2/13 ③

E—Engine instrument panel (on units within Serial numbers range 2090 through 2129).

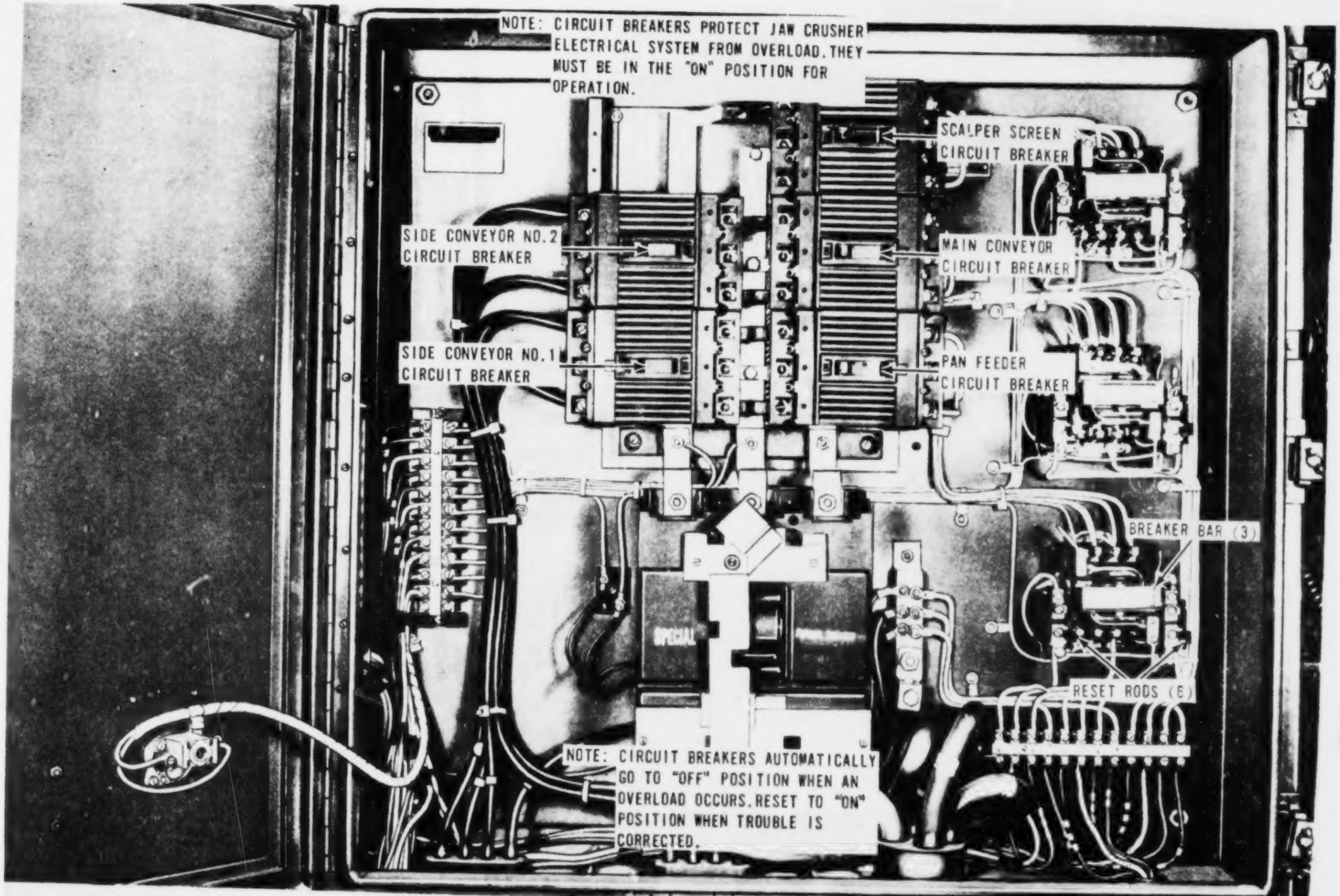
Figure 13—Continued.



MAIN ELECTRICAL SWITCH CONTROL HANDLE: TURNS JAW CRUSHER ELECTRICAL POWER "ON" AND "OFF".
EMERGENCY STOP ELECTRICAL CONTROL BUTTON: WHEN DEPRESSED: CUTS OFF ALL ELECTRICAL CIRCUITS.
F
EMC 3820-205-10/2/14④

F—Main electrical switch handle.

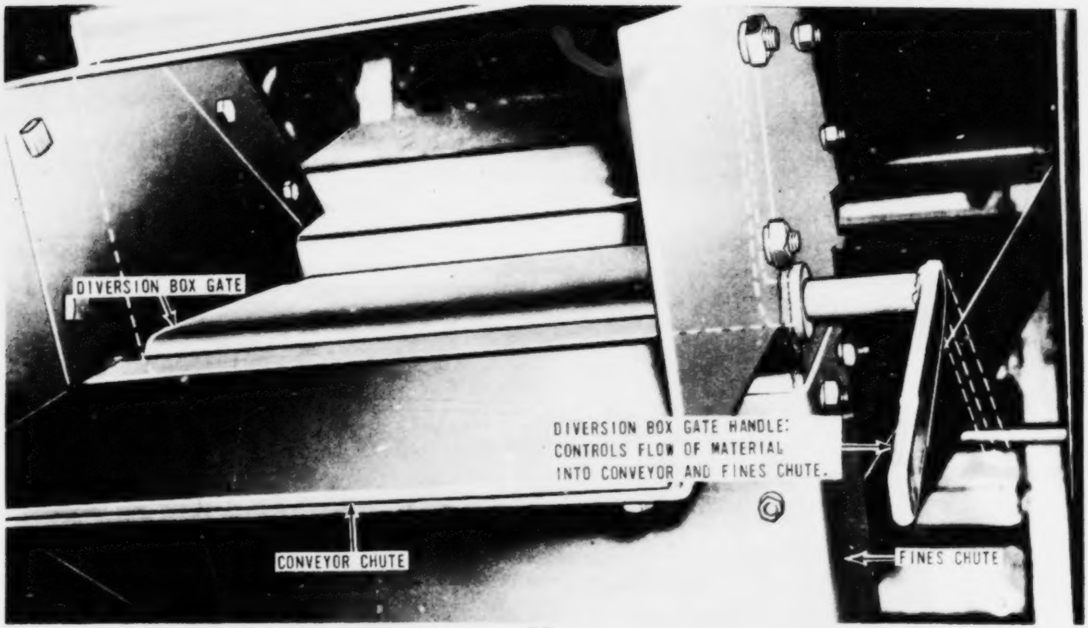
Figure 13—Continued.


NOTE: CIRCUIT BREAKERS PROTECT JAW CRUSHER ELECTRICAL SYSTEM FROM OVERLOAD. THEY MUST BE IN THE "ON" POSITION FOR OPERATION.
SCALPER SCREEN CIRCUIT BREAKER
SIDE CONVEYOR NO. 2 CIRCUIT BREAKER
MAIN CONVEYOR CIRCUIT BREAKER
SIDE CONVEYOR NO. 1 CIRCUIT BREAKER
PAN FEEDER CIRCUIT BREAKER
BREAKER BAR (3)
SPECIAL
RESET RODS (6)
NOTE: CIRCUIT BREAKERS AUTOMATICALLY GO TO "OFF" POSITION WHEN AN OVERLOAD OCCURS. RESET TO "ON" POSITION WHEN TROUBLE IS CORRECTED.

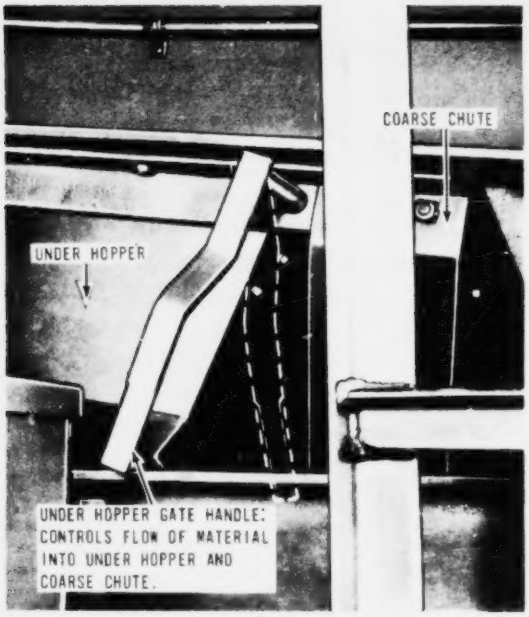
G

MSC 3820-205-10/2/13 ⑤

G—Main electrical control panel.
Figure 13—Continued.


DIVERSION BOX GATE
DIVERSION BOX GATE HANDLE: CONTROLS FLOW OF MATERIAL INTO CONVEYOR AND FINES CHUTE.
CONVEYOR CHUTE
FINES CHUTE

H

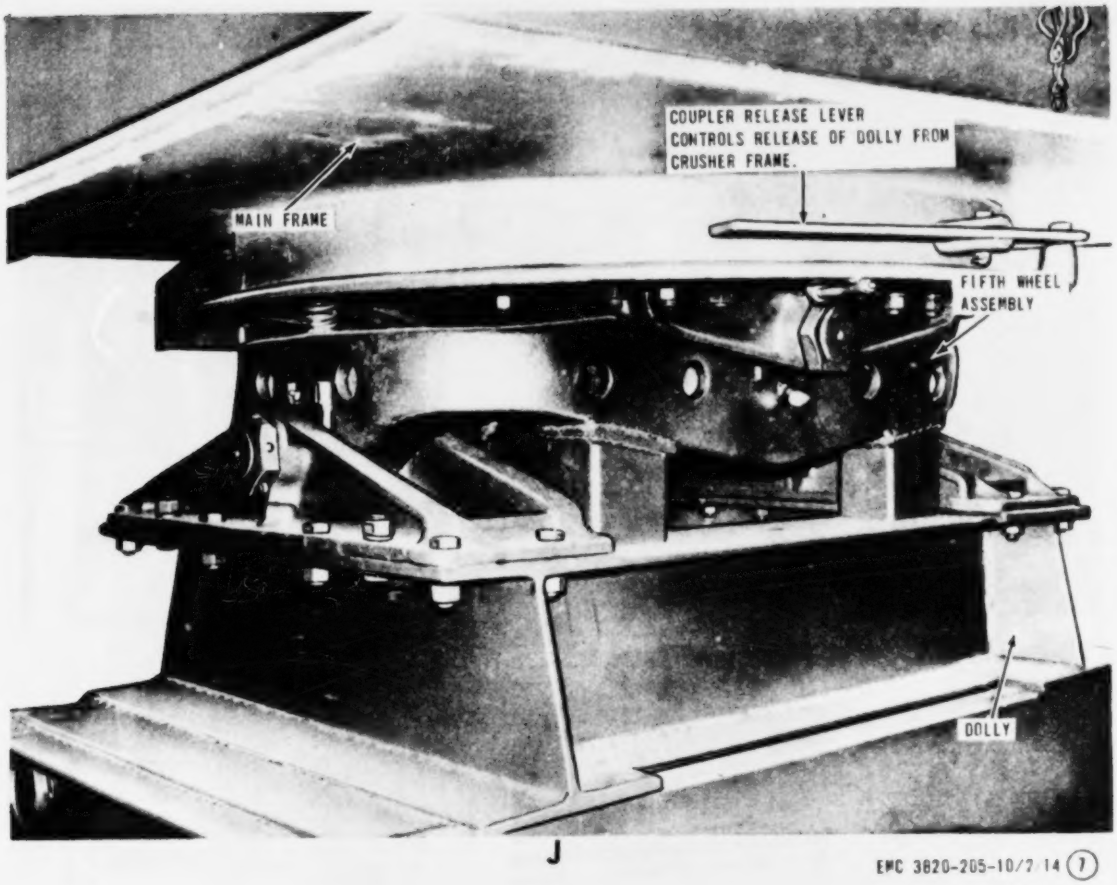

COARSE CHUTE
UNDER HOPPER
UNDER HOPPER GATE HANDLE: CONTROLS FLOW OF MATERIAL INTO UNDER HOPPER AND COARSE CHUTE.

I

EMC 3820-205-10/2/14(6)

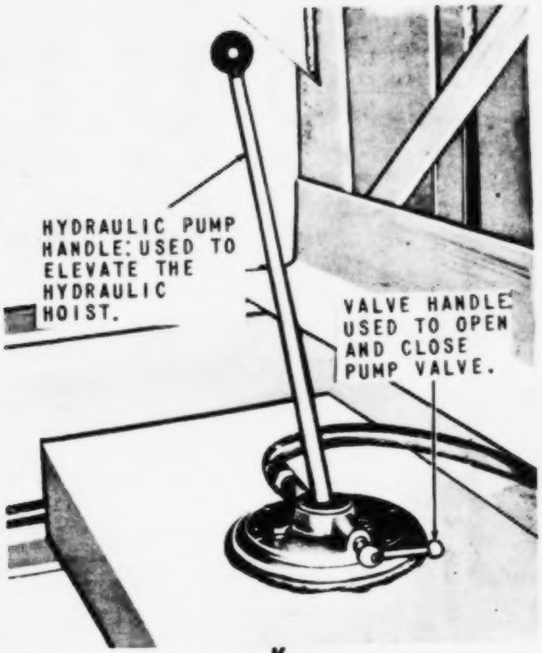
H—Diversion box gate handle.
I—Under hopper gate handle.

Figure 13—Continued.


COUPLER RELEASE LEVER CONTROLS RELEASE OF DOLLY FROM CRUSHER FRAME.
MAIN FRAME
FIFTH WHEEL ASSEMBLY
DOLLY
J
EMC 3820-205-10/2 14 ⑦

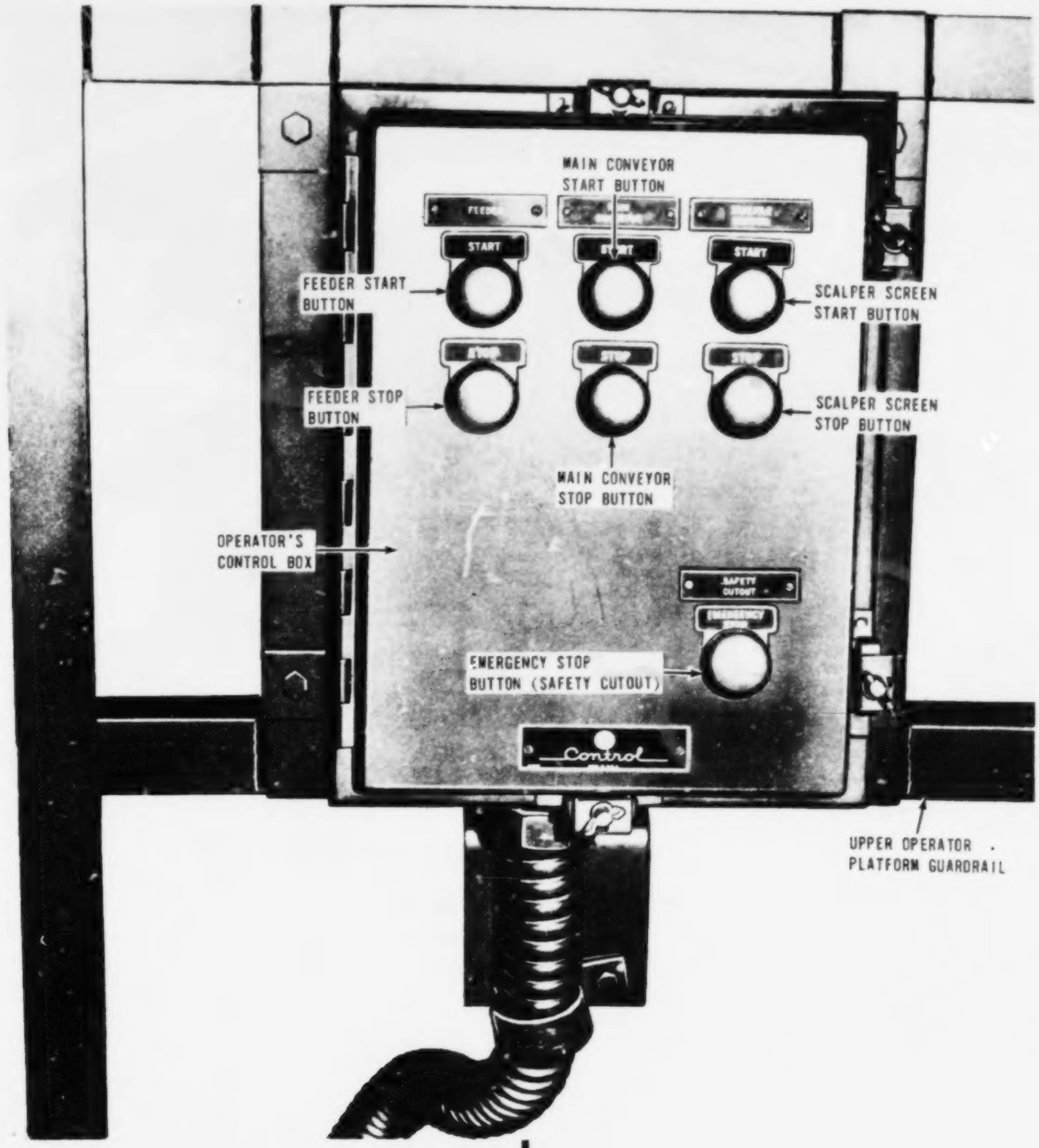
J—Fifth wheel coupler control.

Figure 13—Continued.


HYDRAULIC PUMP HANDLE: USED TO ELEVATE THE HYDRAULIC HOIST.
VALVE HANDLE: USED TO OPEN AND CLOSE PUMP VALVE.
K
EMC 3820-205-10/2/14⑧

K—Hydraulic pump control.

Figure 13—Continued.


MAIN CONVEYOR START BUTTON
START
START
START
FEEDER START BUTTON
SCALPER SCREEN START BUTTON
STOP
STOP
STOP
FEEDER STOP BUTTON
SCALPER SCREEN STOP BUTTON
MAIN CONVEYOR STOP BUTTON
OPERATOR'S CONTROL BOX
SAFETY CUTOUT
EMERGENCY STOP
EMERGENCY STOP BUTTON (SAFETY CUTOUT)
Control
UPPER OPERATOR PLATFORM GUARDRAIL

L

MSC 3820-205-10/2/13 ⑨

L—Operator's control box.

Figure 13—Continued.

Caution: **Operator's switch boxes must be properly closed and sealed to prevent water from entering the box and causing switches and controls to corrode and become unserviceable. All control boxes should be examined to assure that doors are properly sealed and closed tight.**

Section III. OPERATION OF EQUIPMENT

13. General

a. The instructions in this section are published for the information and guidance of the personnel responsible for operation of Eagle Crusher Model 5157 Jaw Crusher.

b. The operator must know how to perform every operation of which the jaw crusher is capable. This section gives instructions on starting and stopping the jaw crusher, basic motions of the jaw crusher, and on coordinating the basic motion of the crusher to perform the specific tasks for which the equipment is designed. Since nearly every job presents a different problem, the operator may have to vary the given procedure to fit the individual job.

14. Starting the Engine

a. Preparation for Starting.

(1) Perform the daily preventive maintenance services (par. 31).

(2) See that the fuel shutoff valve (B, fig. 13) is in the open position.

Caution: **The manual control fording valve located inside the fuel tank cap is closed before shipment is made from contractor's plant. For proper ventilation of fuel tank, valve must be opened when crusher is in operation.**

b. Starting the Engine. Start the engine in the numerical sequence as instructed on figure 14.

c. Cold Temperature Starting.

(1) Follow the procedure as outlined in *a* above.

(2) Start the engine as outlined in *b* above. When pressing the starter button, activate the diesel engine ether starting aid as instructed in paragraph 25.

15. Stopping the Engine

a. Stop the engine in the numerical sequence as instructed on figure 15.

b. Close fuel shutoff valve (fig. 138).

16. Operating Details

a. General. Information given in this paragraph will assist the operator with the operation of the jaw crusher in all normal and abnormal conditions.

b. Operating the Crusher.

(1) Perform the preventive maintenance services listed in paragraph 32.

(2) Start the engine (par. 14).

(3) Operate the crusher as instructed on figure 16.

Note. It is the responsibility of the crusher operator to maintain an even distribution of aggregate through the crusher and to avoid overloading, jamming, spillage, or other operating practice that could result in damage to the crusher components or unsatisfactory production.

c. Stopping the Crusher.

(1) Stop the pan feeder (fig. 16).

(2) Stop the scalper vibrating screen (fig. 16).

(3) Stop the moveable jaw (fig. 16).

(4) Stop the discharge conveyor (fig. 16).

(5) Turn off the power at the main electrical switch (fig. 16).

(6) Stop the engine (par. 15).

Note. Except for an emergency shut down, operate the crusher until it is empty before shutting down.

17. Operation in Extreme Cold (Below 0°F)

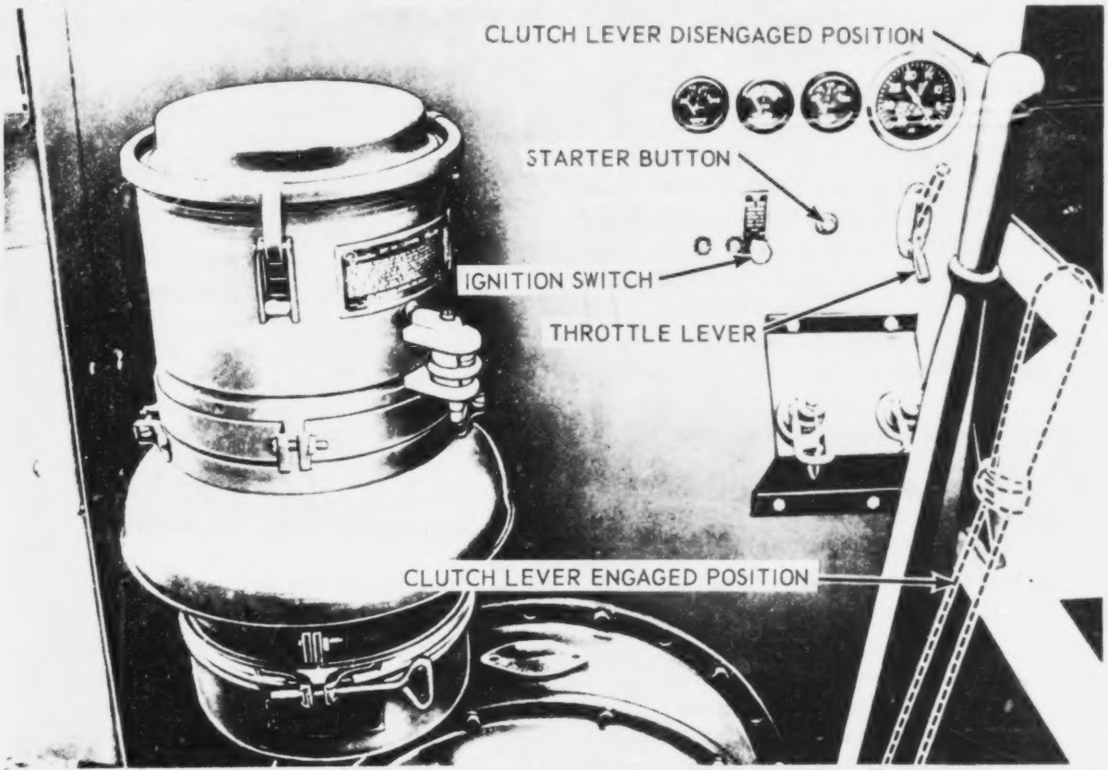
a. Lubrication. Use the proper grade of lubricant for all points of lubrication. Refer to current lubrication order (LO-5-3820-205-20/2).

b. Cooling System. For checking the antifreeze solution refer to organizational maintenance.

NOTE UNITS OF EQUIPMENT WITHIN SERIAL NUMBER RANGE 2090 THRU 2129 ARE EQUIPPED WITH DUAL IGNITION-STARTER SWITCH.

CAUTION DO NOT CRANK THE ENGINE FOR MORE THAN 30 SECONDS AT A TIME. ALLOW ONE MINUTE BETWEEN ATTEMPTS IF ENGINE FAILS TO START.

1 DISENGAGE THE CLUTCH AND MOVE THE THROTTLE LEVER TO 1/4 OPEN.
2 TURN IGNITION SWITCH TO "ON" POSITION, PRESS STARTER BUTTON (RELEASE IMMEDIATELY WHEN ENGINE STARTS). (SEE NOTE.)
3 MOVE THROTTLE LEVER TO "RUN" POSITION.
4 RUN ENGINE AT 1,100 RPM UNTIL OPERATING TEMPERATURE IS REACHED BEFORE APPLYING LOAD
5 OBSERVE ALL INSTRUMENTS AND GAGES FOR PROPER OPERATING RANGE.


CLUTCH LEVER DISENGAGED POSITION
STARTER BUTTON
IGNITION SWITCH
THROTTLE LEVER
CLUTCH LEVER ENGAGED POSITION

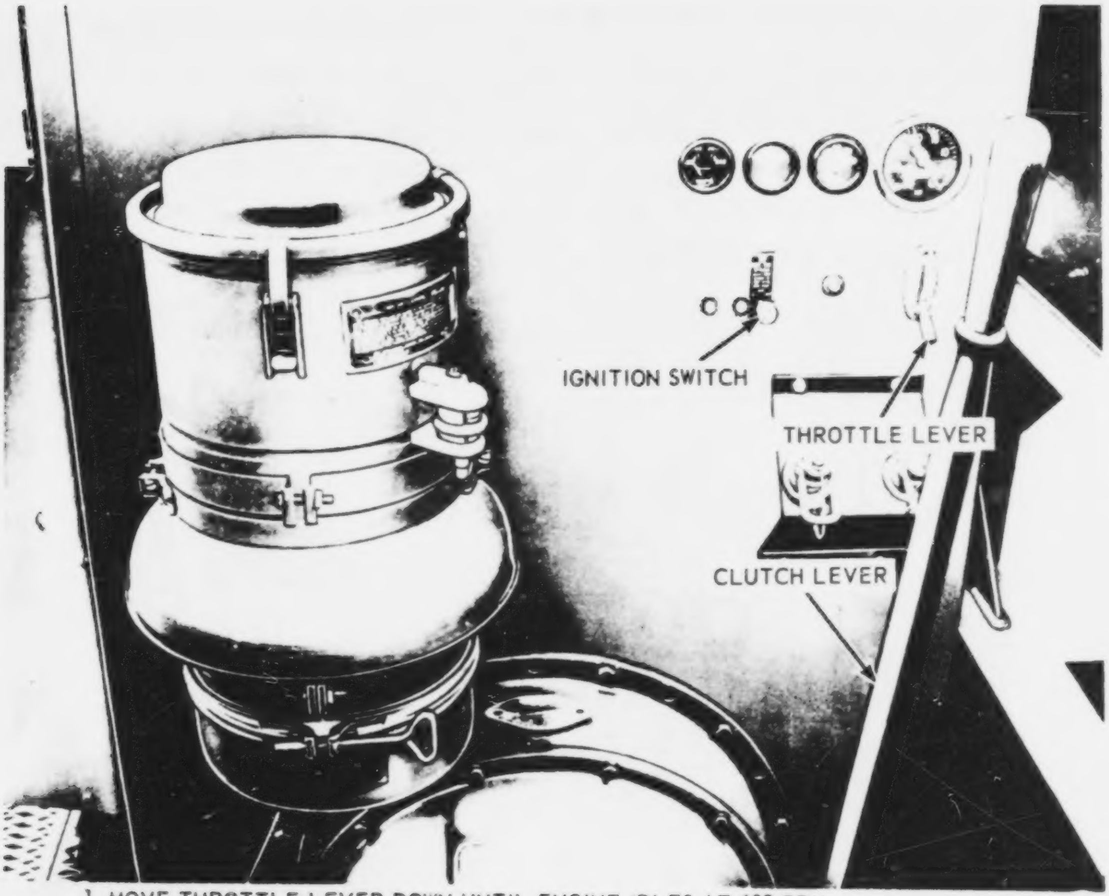
CAUTION STOP ENGINE IF IGNITION SWITCH FAILS TO RETURN TO "RUN" POSITION AFTER ENGINE STARTS. APPLY LOAD ONLY AFTER COMPLETE ENGINE WARMUP.

NORMAL READINGS:

ENGINE TEMPERATURE	165–185°F.
BATT.-GEN. INDICATOR	GREEN RANGE
OIL PRESSURE	55–65 PSI
TACHOMETER-HOUR-METER	1,400 RPM

MSC 3820-205-10/2/14

Figure 14. Starting the engine.

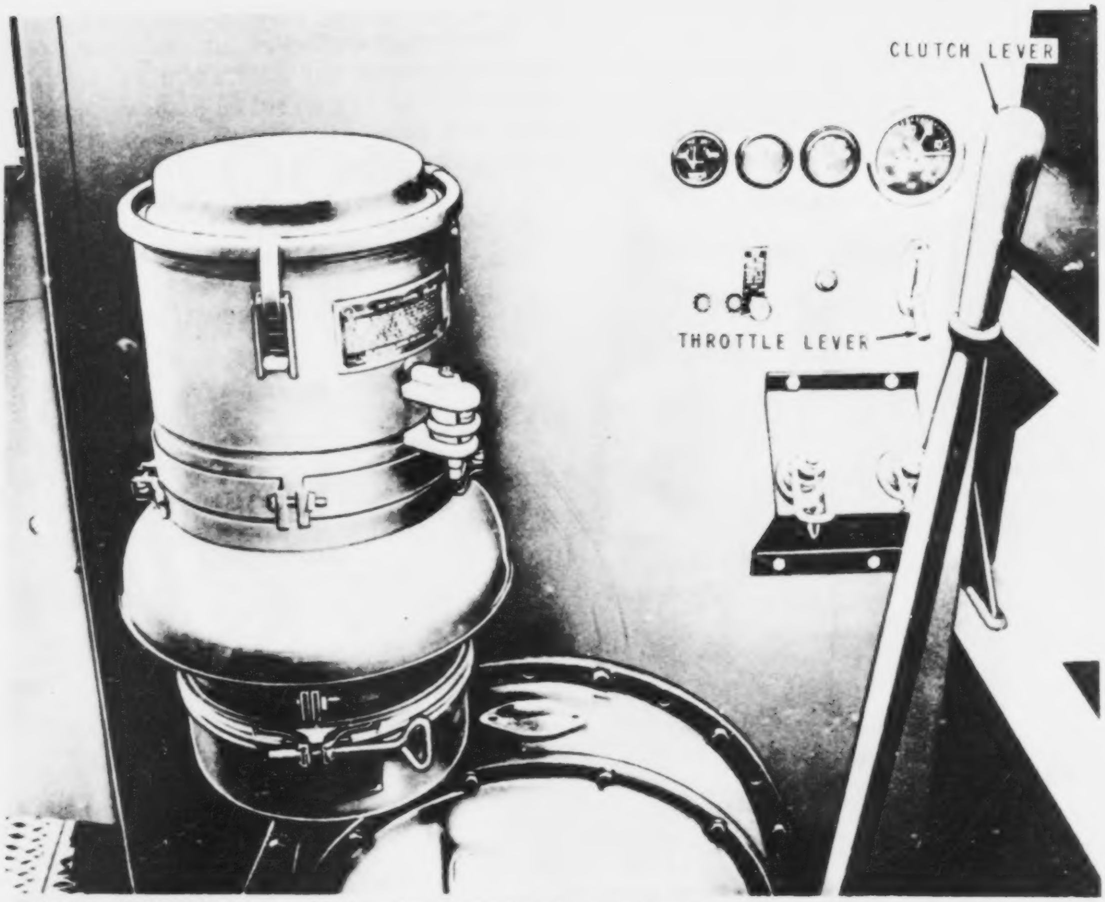


IGNITION SWITCH
THROTTLE LEVER
CLUTCH LEVER

1. MOVE THROTTLE LEVER DOWN UNTIL ENGINE IDLES AT 600 RPM.
2. DISENGAGE CLUTCH.
3. ALLOW ENGINE TO IDLE 5 MINUTES.
4. TURN IGNITION SWITCH TO "OFF" POSITION.
5. MOVE THROTTLE LEVER TO "OFF" POSITION.

MSC 3820-205-10 1 14

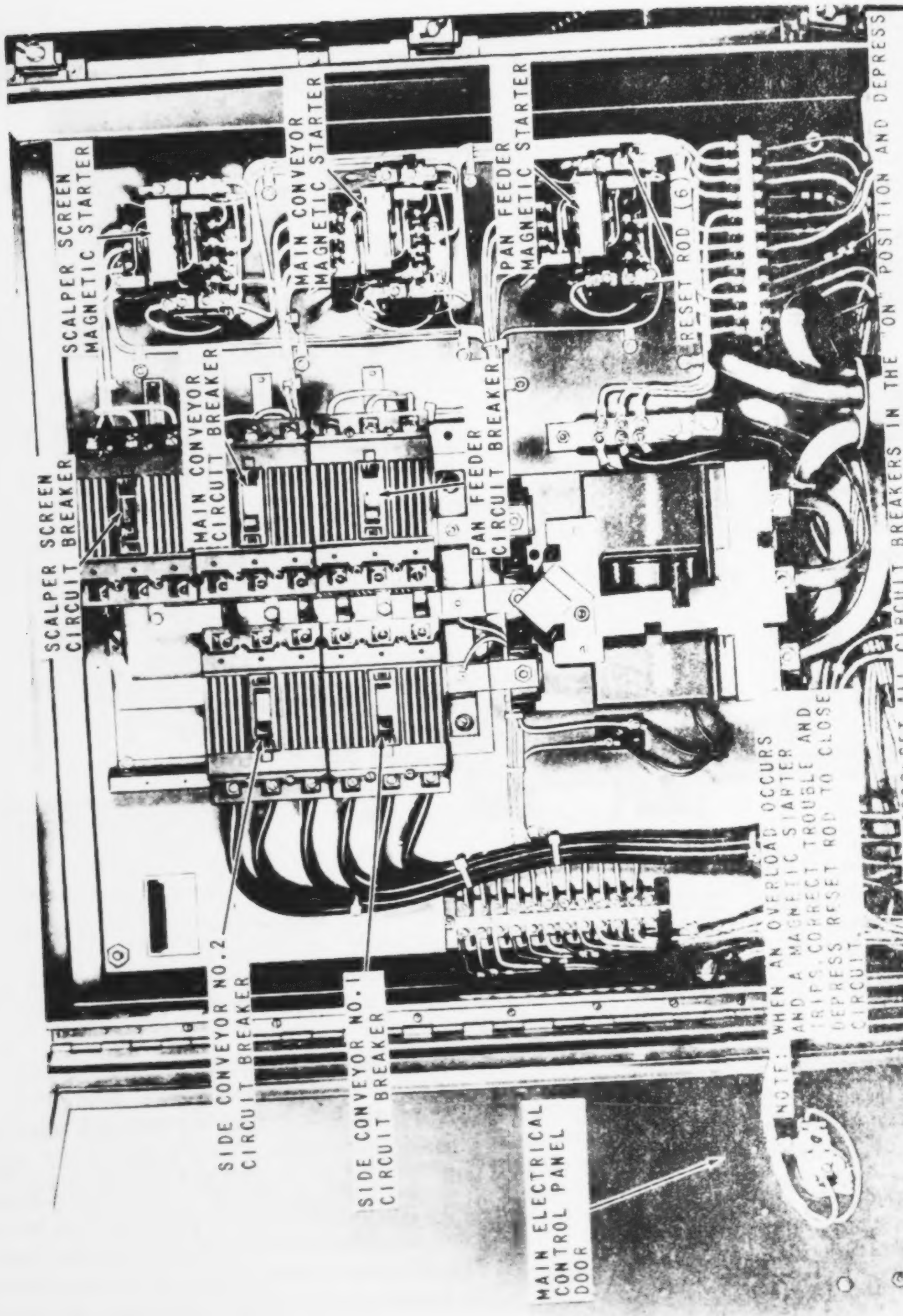
Figure 15. Stopping the engine.


CLUTCH LEVER
THROTTLE LEVER

1. WITH THE THROTTLE LEVER SET TO OPERATE THE ENGINE AT IDLE SPEED, POSITION THE CLUTCH LEVER FORWARD TO ENGAGE THE CLUTCH. MOVE THE THROTTLE LEVER UP TO THE "RUN" POSITION.

MSC 3820-205-10/2/16 ①

Figure 16. Jaw crusher operation details.

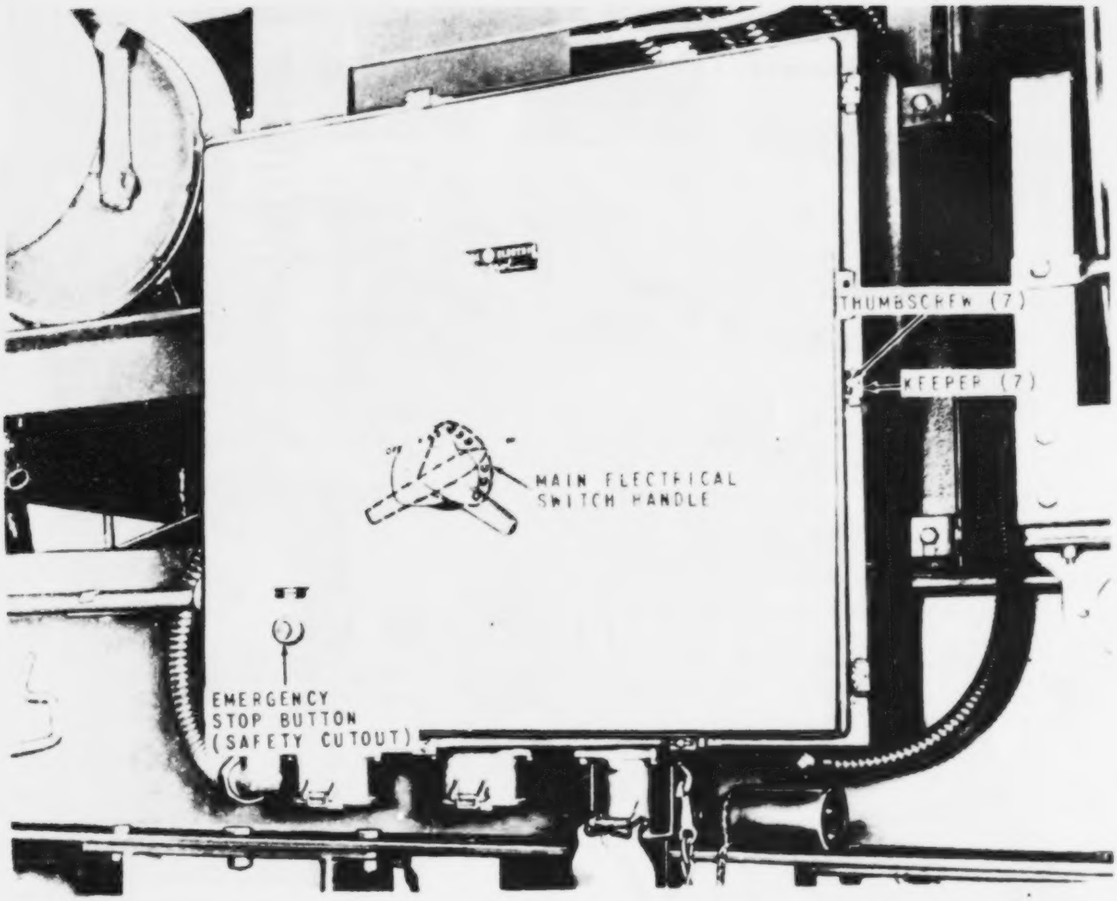

SCALPER SCREEN MAGNETIC STARTER
MAIN CONVEYOR MAGNETIC STARTER
PAN FEEDER MAGNETIC STARTER
RESET ROD (6)
SCALPER SCREEN CIRCUIT BREAKER
MAIN CONVEYOR CIRCUIT BREAKER
PAN FEEDER CIRCUIT BREAKER
SIDE CONVEYOR NO. 2 CIRCUIT BREAKER
SIDE CONVEYOR NO. 1 CIRCUIT BREAKER
MAIN ELECTRICAL CONTROL PANEL DOOR

NOTE: WHEN AN OVERLOAD OCCURS AND A MAGNETIC STARTER TRIPS, CORRECT TROUBLE AND DEPRESS RESET ROD TO CLOSE CIRCUIT.

2. OPEN MAIN ELECTRICAL CONTROL PANEL DOOR: SET ALL CIRCUIT BREAKERS IN THE "ON" POSITION AND DEPRESS ALL RESET RODS. CLOSE MAIN ELECTRICAL CONTROL PANEL DOOR.

MSC 3820-205-10/2/16 ②

Figure 16—Continued.


THUMBSCREW (7)
KEEPER (7)
MAIN ELECTRICAL SWITCH HANDLE
EMERGENCY STOP BUTTON (SAFETY CUTOUT)

3. ENGAGE THE KEEPERS OVER THE EDGE OF THE MAIN ELECTRICAL CONTROL PANEL DOOR AND TIGHTEN THUMBSCREWS. TURN THE MAIN ELECTRICAL CIRCUIT BREAKER SWITCH HANDLE IN A CLOCKWISE DIRECTION TO BRING POWER INTO THE CONTROL BOX. TURN COUNTERCLOCKWISE TO CUT OFF ELECTRICAL POWER. IN CASE OF EMERGENCY DEPRESS THE EMERGENCY STOP BUTTON TO CUT OFF ALL ELECTRICAL POWER.

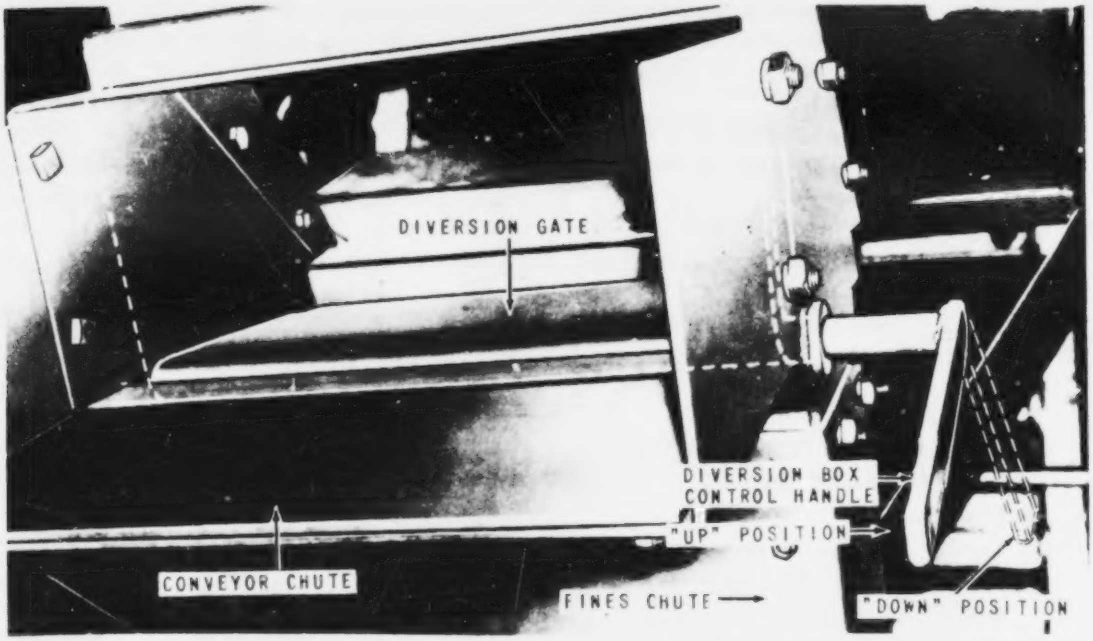
MSC 3820-205-10 2/16 ③

Figure 16—Continued.

c. Batteries. A fully charged battery can withstand low temperatures. A partially charged battery may freeze and crack the cells. Keep battery fully charged and the electrolyte at three-eighths of an inch above the plates (par. 62).

Caution: **Run the engine for one hour after adding distilled water to the battery. This permits the added water to mix with the electrolyte and prevent freezing.**

d. Fuel System. Keep the fuel tank filled to prevent condensation. Any water in the tank will be carried to the fuel pump fuel filters; therefore, it is important to clean the fuel filters more often than under normal conditions (par. 55). Keep the fuel tank cap and vent free from moisture and ice. Drain the water from the fuel filter daily during extreme cold weather operation.



4. WITH THE DIVERSION BOX CONTROL HANDLE IN THE "UP" POSITION, MATERIAL THAT IS IN THE UNDER HOPPER WILL BE DIVERTED OUT THE CONVEYOR CHUTE. WITH THE CONTROL HANDLE IN THE "DOWN" POSITION, MATERIAL WILL BE DIVERTED INTO THE FINES CHUTE. SET THE CONTROL HANDLE IN THE DESIRED POSITION.

MSC 3820-205-10 2/16 ④

Figure 16—Continued.

18. Operation in Extreme Heat

a. Lubrication. Use the proper grade of lubrication for all lubrication points. Refer to the current lubrication order (LO 5–3820–205–20/2) for special lubrication instructions (par. 29).

b. Cooling System. Check the coolant level more frequently and keep the cooling system clean (par. 58). Avoid the use of water containing alkali, salt, or other substances that would cause rapid formation of scale or rust. Make sure the radiator air passages are clean. Remove any obstructions such as dirt, leaves, or other debris by applying compressed air in reverse of the normal flow of air through the radiator. If the engine becomes overheated, allow to cool before adding water and then add water in small amounts as the engine is running at idle speed.

Warning: **Use extreme care in removing the radiator cap from an overheated engine.**

c. Batteries. Water in the batteries will evaporate rapidly at high temperatures. Check the batteries frequently and replenish with clean distilled water (par. 62).

19. Operation in Dusty or Sandy Areas

a. Lubrication.

(1) Clean all filters frequently and clean all lubrication points before applying lubricant.

(2) Keep the outside of the engine and the electrical motors clean. Dirt left on the outside will eventually filtrate into the motor. Dirt remaining on the outside can also interfere with proper cooling.

(3) Clean area around the lubrication oil

filler cap and dispstick level gage before adding or checking the oil.

(4) Clean the crankcase breather frequently (par. 29).

(5) Lubricate in accordance with current lubrication order (LO 5-3820-205-20/2).

b. Cooling System.

(1) Keep the radiator and fins clean and free of foreign material.

(2) Check the level of coolant in the radiator frequently. Fill to proper level with clean, fresh water. Check all hose and gaskets for leaks.

(3) Check condition of fan belts and keep properly adjusted (par. 60).

c. Fuel System.

(1) Service the fuel filters (par. 55) frequently to keep fuel system free of sand and dirt.

(2) Keep fuel tank cap on and securely tightened. Wipe dirt from cap and adjacent area before removing cap and filling the tank. Keep the vent in the fuel cap open.

(3) Check and service the air cleaner frequently (par. 56).

20. Operation Under Rainy or Humid Conditions

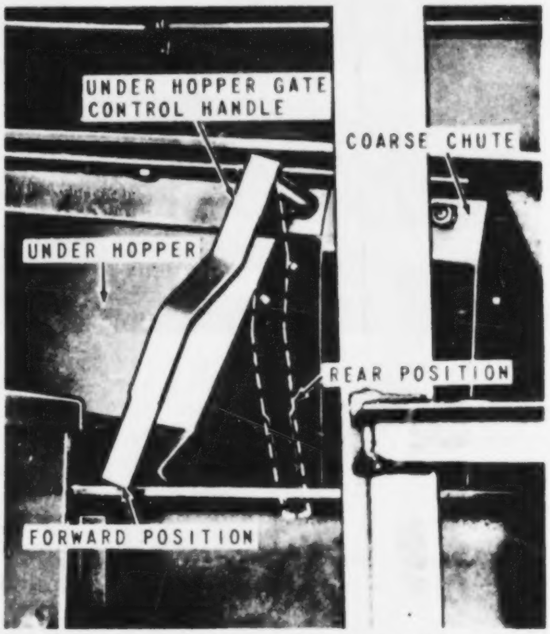
a. Lubrication. Lubricate the crusher in accordance with current lubrication order (LO 5-3820-205-20/2).

b. Cooling System. The transfer of heat from the engine and radiator to the atmosphere is much slower under rainy or humid conditions. To prevent overheating, keep the cooling system full, the radiator cap secure, the radiator core free of obstructions, and the fan belt properly adjusted.

c. Batteries. Keep the outside of the batteries dry and free from corrosion; clean and coat the terminals and connectors with a suitable grease to prevent corrosion. Check the insulation of the cables and jumpers for signs of deterioration, mold, or mildew.

d. Fuel System. Keep the fuel tank full to prevent condensation. Moisture will accumulate in the air space above the fuel in the tank. Service the fuel pump and fuel filters frequently (par. 55).

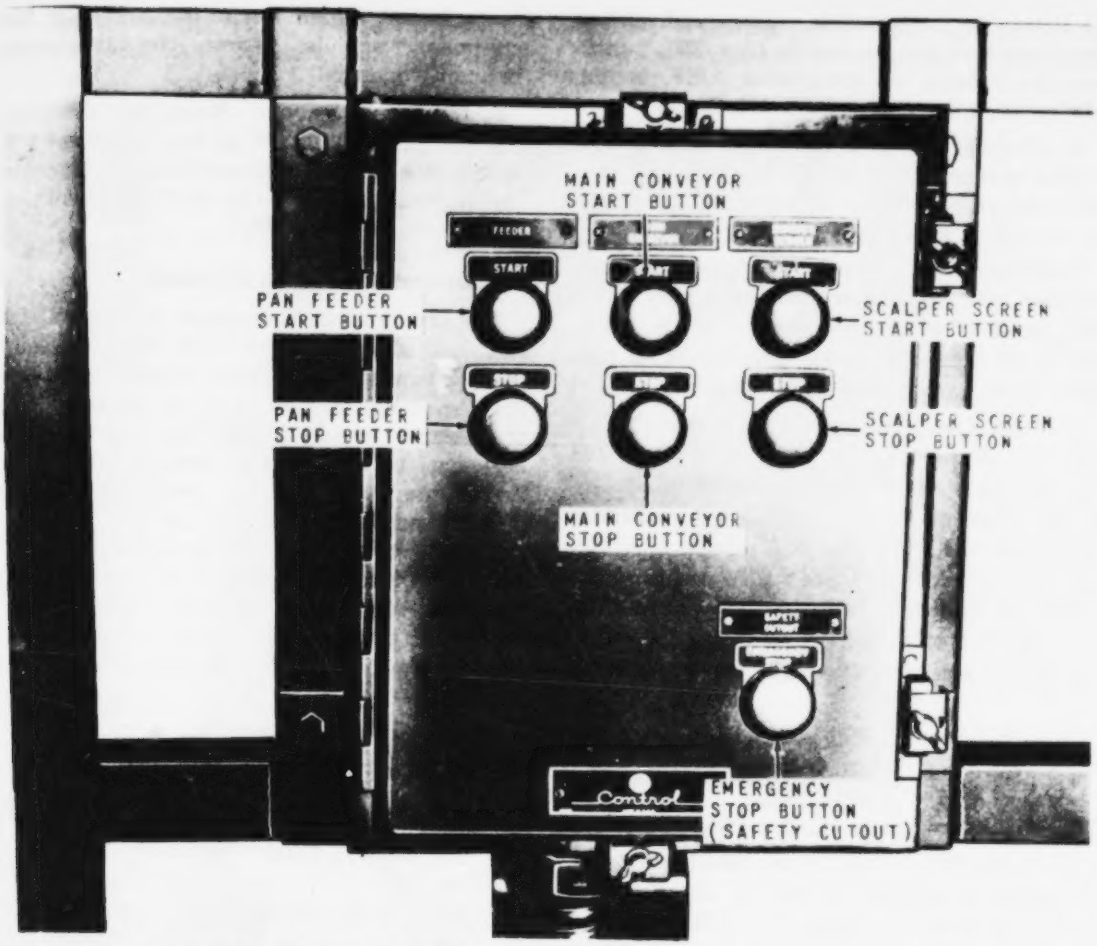
e. Conveyors and Belts. A rainy, humid condition causes material to stick to conveyors and belts. Keep the scrapers adjusted and the belts as clean as possible. Clean the conveyors and



5. WITH THE UNDER HOPPER GATE CONTROL HANDLE IN THE "FORWARD" POSITION, MATERIAL THAT PASSES OVER THE SCREEN WILL BE DIVERTED INTO THE UNDER HOPPER. WITH THE CONTROL HANDLE IN THE "REAR" POSITION THE MATERIAL WILL BE DIVERTED INTO THE COARSE CHUTE AND FALL ONTO THE MAIN DISCHARGE CONVEYOR. SET THE CONTROL HANDLE IN THE DESIRED POSITION.

MSC 3820-205/10/2/16 ⑤

Figure 16—Continued.


MAIN CONVEYOR START BUTTON
FEEDER
START
PAN FEEDER START BUTTON
SCALPER SCREEN START BUTTON
STOP
PAN FEEDER STOP BUTTON
SCALPER SCREEN STOP BUTTON
MAIN CONVEYOR STOP BUTTON
SAFETY CUTOUT
Control
EMERGENCY STOP BUTTON (SAFETY CUTOUT)

6. PUSH THE START BUTTONS TO START THE MAIN CONVEYOR, SCALPER SCREEN, AND PAN FEEDER. PUSH THE STOP BUTTONS TO STOP THE MAIN CONVEYOR, SCALPER SCREEN, AND PAN FEEDER. IN AN EMERGENCY PUSH THE EMERGENCY STOP BUTTON TO STOP ALL ELECTRIC MOTORS.

MSC 3820-205-10 2 16 ⑥

Figure 16—Continued.

belts after each operation to prevent material from drying, caking, and building up on them.

f. Exposed Metal Surfaces. Exposure to high humidity and rain causes rusting and corrosive action on exposed metal surfaces. Coat all unpainted surfaces with a suitable lubricating oil or grease.

g. Protection. Cover crusher engine, electric motors and controls during periods of nonoperation. Remove cover and open engine panels to allow unit to dry during dry periods before operation. Paint or coat with grease all exposed metal surfaces to prevent rusting.

21. Operation in Salt-Water Areas

a. General. The deterioration and corrosion of metal is greatly accelerated in salt-water areas. Keep all exposed nonpolished metal surfaces painted (TM 9–2851). Coat all other exposed metal areas with a suitable lubricating oil, grease, or preservative. Check and service crankcase breather frequently (par. 28). Lubricate the crusher in accordance with current lubrication order (LO 5-3820-205-20/2).

b. Cooling. Be sure the water used in the cooling system is free of salt or alkali. Use an approved rust inhibitor to prevent the formation of rust or scale in the cooling system.

Caution: **The cooling system is not intended for use with salt water. However, salt water may be used in an emergency. Drain, flush, and refill the cooling system as soon as possible after having used this expedient.**

c. Fuel System. Keep the fuel tank full to prevent accumulation of salt-laden moisture in the tank as a result of condensation of the air in the space above the fuel. Service the fuel pump and fuel filters frequently (par. 55). Before each operation, open the fuel tank drain valve (fig. 13) and drain about one pint of fuel from the tank. This will normally eliminate any water and dirt that have accumulated in the tank and settled to the bottom while the equipment was idle. Service the air cleaner frequently (par. 56).

d. Electrical System. Keep the electrical system clean and dry. Wipe the equipment frequently to eliminate moisture and salt deposits. Pay particular attention to electrical terminals, connectors, and switches.

22. Operation in High Altitudes

The jaw crusher is designed to operate efficiently at altitudes up to 5,000 feet, with only slight decrease in efficiency. Above 5,000 feet the engine will operate with an increased loss of efficiency as the altitude increases and it is necessary to decrease the amount of fuel injected into the engine, to compensate for the lower atmospheric pressure. If the engine is operating erratically, with an apparent loss of power, report this condition to organizational maintenance. Keep the air cleaner and air passages clean and free of obstructions that would restrict the amount of air flowing to the engine.

Section IV. OPERATION OF AUXILIARY MATERIEL USED IN CONJUNCTION WITH JAW CRUSHER

23. Fire Extinguisher (Carbon Dioxide Type)

a. Description. The carbon dioxide fire extinguisher is suitable for use on electrical and flammable fires. The carbon dioxide type is of the 5-pound size. The 5-pound extinguisher is portable.

b. Operation. Remove the fire extinguisher from its location, break the seal, operate the control valve, and direct the stream at the base of the flame.

c. Refilling and Maintenance. For detailed information on refilling and maintenance, refer to TM 5-687 and TM 9-1799.

24. Fire Extinguisher (Dry Chemical Type)

a. Descriptoin. The dry chemical type fire extinguisher is suitable for use on all types of fires and is effective in areas where ambient temperature is —25° F and above. If winterized (pressured by nitrogen), the fire extinguisher may be used in temperatures below —25° F. The fire extinguisher is a 2½ pound, stored pressure, lever-operated extinguisher.

b. Operation.

(1) Remove the fire extinguisher from its location.

(2) Lift the handle.

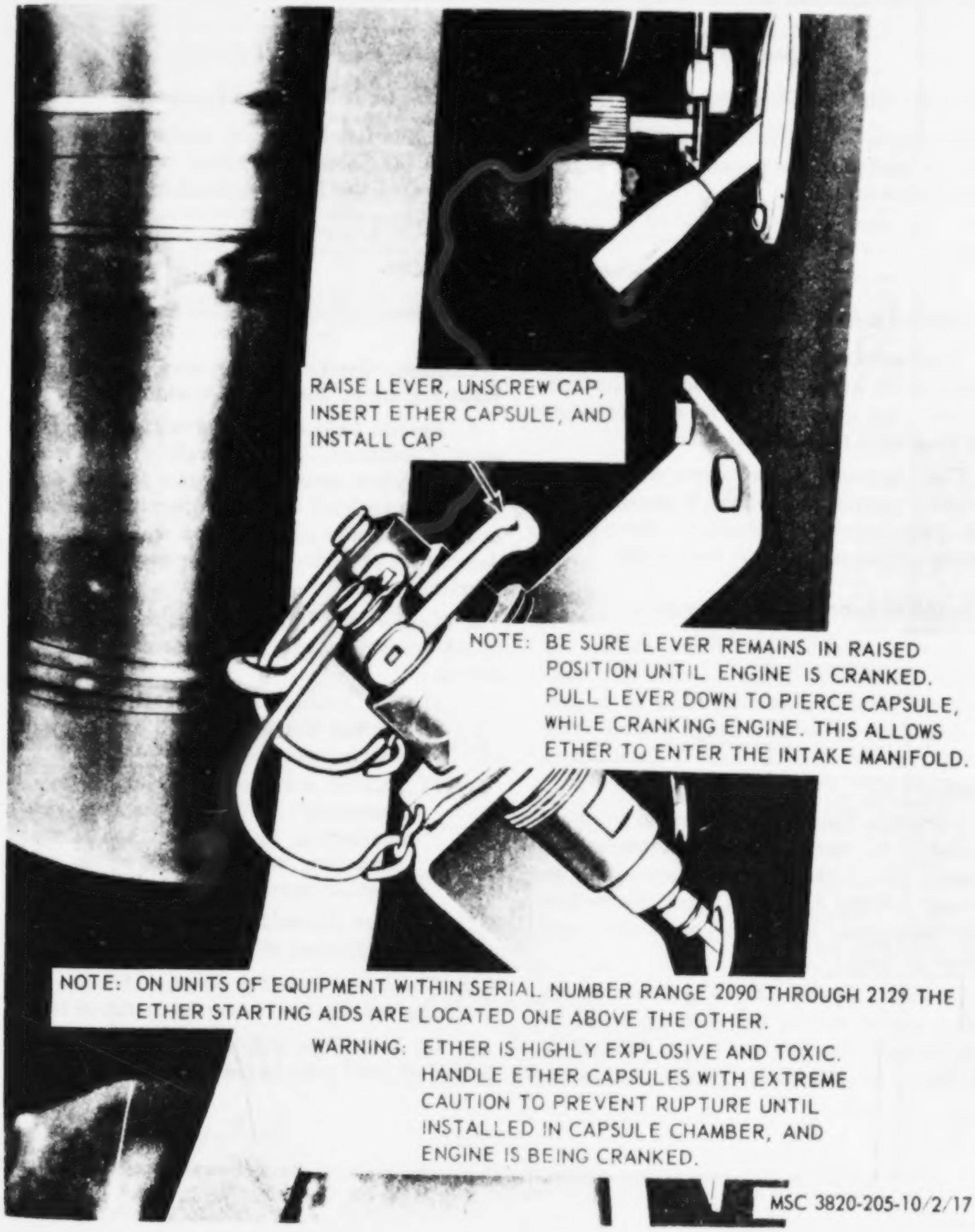
(3) Press the lever.

(4) Direct the discharge of power at the base of the flames by using a side-to-side sweeping motion.

c. Maintenance. Weigh the fire extinguisher every 6 months and replace the extinguisher if the weight is less than 4½ pounds, or if the pressure is below 125 pounds. Refer to SB 5-111. The dry chemical fire extinguisher will be serviced at installation level through Repair and Utilities facilities, with the filling agent supplied by local procurement through Troop Supply Channels.

25. Ether Starting Aids

The diesel engine ether starting aids illustrated on figure 17 are designed to inject a highly volatile fuel into the air intake of the engine. The ether helps to ignite the fuel at low ambient temperature. The ether is contained in capsule to facilitate handling. When the temperature range is +32° to —25° F use the primer assembly as instructed on figure 17.



RAISE LEVER, UNSCREW CAP, INSERT ETHER CAPSULE, AND INSTALL CAP.

NOTE: BE SURE LEVER REMAINS IN RAISED POSITION UNTIL ENGINE IS CRANKED. PULL LEVER DOWN TO PIERCE CAPSULE, WHILE CRANKING ENGINE. THIS ALLOWS ETHER TO ENTER THE INTAKE MANIFOLD.

NOTE: ON UNITS OF EQUIPMENT WITHIN SERIAL NUMBER RANGE 2090 THROUGH 2129 THE ETHER STARTING AIDS ARE LOCATED ONE ABOVE THE OTHER.

WARNING: ETHER IS HIGHLY EXPLOSIVE AND TOXIC. HANDLE ETHER CAPSULES WITH EXTREME CAUTION TO PREVENT RUPTURE UNTIL INSTALLED IN CAPSULE CHAMBER, AND ENGINE IS BEING CRANKED.

MSC 3820-205-10/2/17

Figure 17. Ether starting aid, service.

CHAPTER 3

MAINTENANCE INSTRUCTIONS

Section I. OPERATOR'S TOOLS AND EQUIPMENT

26. Special Tools and Equipment

There are no special tools or equipment required to perform maintenance on the jaw crusher by the operator.

27. Basic Issue Tools and Equipment

The basic issue tools and equipment authorized for or initially supplied with the jaw crusher are listed in Appendix II.

Section II. LUBRICATION

28. General Lubrication Information

a. This section contains a reproduction of the lubrication order, and lubrication instructions which are supplemental to, and not specifically covered in the lubrication order.

b. The lubrication order shown on figure 18 is an exact reproduction of the approved lubrication order for the jaw crusher. For current lubrication order refer to DA Pam 310–4.

29. Detailed Lubrication Information

a. Care of Lubricants. When storing or handling lubricants, make certain the containers are clean and securely covered to prevent dirt, dust, or other foreign matter from entering. Be sure the lubricant is clean before using it.

b. Cleaning. Clean all surfaces surrounding the point to be lubricated before applying the lubricant. Use a clean cloth dampened in an approved cleaning solvent to clean the surface before lubricating. Remove all excess lubricant after lubrication.

c. Points of Application. The points of application can be located by referring to LO 5–3820–205–20/2 (fig. 18) and to the detailed instructions of the lubrication points. Follow the instructions and apply the lubricants as specified.

***Caution:* Overlubrication may cause equipment failure or damage to working parts.**

d. Special Lubrication Instructions for Unusual Conditions. The intervals will be more frequent when operating the jaw crusher during extremely high or low temperature, in dust or sand, or under any condition which tends to destroy the protective quality or quantity of the lubricant.

e. Engine Oil. When using symbol OES oil in the crankcase these precautions must be observed.

(1) The crankcase oil level must be checked frequently as oil consumption may increase.

(2) This oil may require changnig more frequently than usual because contamination by dilution and sludge formation will increase under cold weather operating conditions.

f. Oil Filter Assemblies Service. Service the oil filter as instructed on figure 19.

g. Crankcase Breather Service. Service the crankcase breather as instructed on figure 20.

h. Oil Level Gage Relacement. Replace a defective oil level gage as instructed on figure 20.

LUBRICATION ORDER

LO 5-3820-205-20/2-1

(Supersedes LO 5-3820-205-20/2-1, dated 7 May 1962)

CRUSHER, JAW: DIESEL AND ELECTRIC DRIVEN; WHEEL MOUNTED, PNEUMATIC TIRES; 75 TON PER HOUR (EAGLE CRUSHER MODEL 5157) W/ENGINE CONTINENTAL MODEL SD 802

References: LO 5-3820-205-2/2-2 and -3, TM 5-3820-205-10/2, C 9100-SL

Intervals are based on normal hours of operations. Reduce to compensate for abnormal operations and severe conditions. During inactive periods sufficient lubrication must be performed for adequate preservation.

Clean fittings before lubricating.

Relubricate after washing or fording.

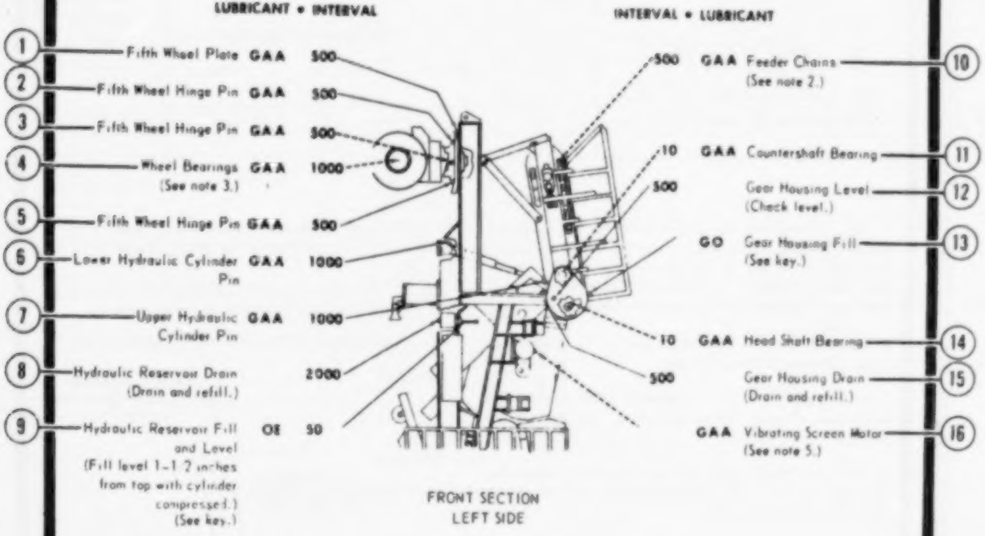
Clean parts with SOLVENT, dry-cleaning, or with OIL, fuel, Diesel. Dry before lubricating.

Lubricate points indicated by dotted arrow shafts on both sides of equipment.

Drain gearcase when hot. Fill and check level.

FOLD

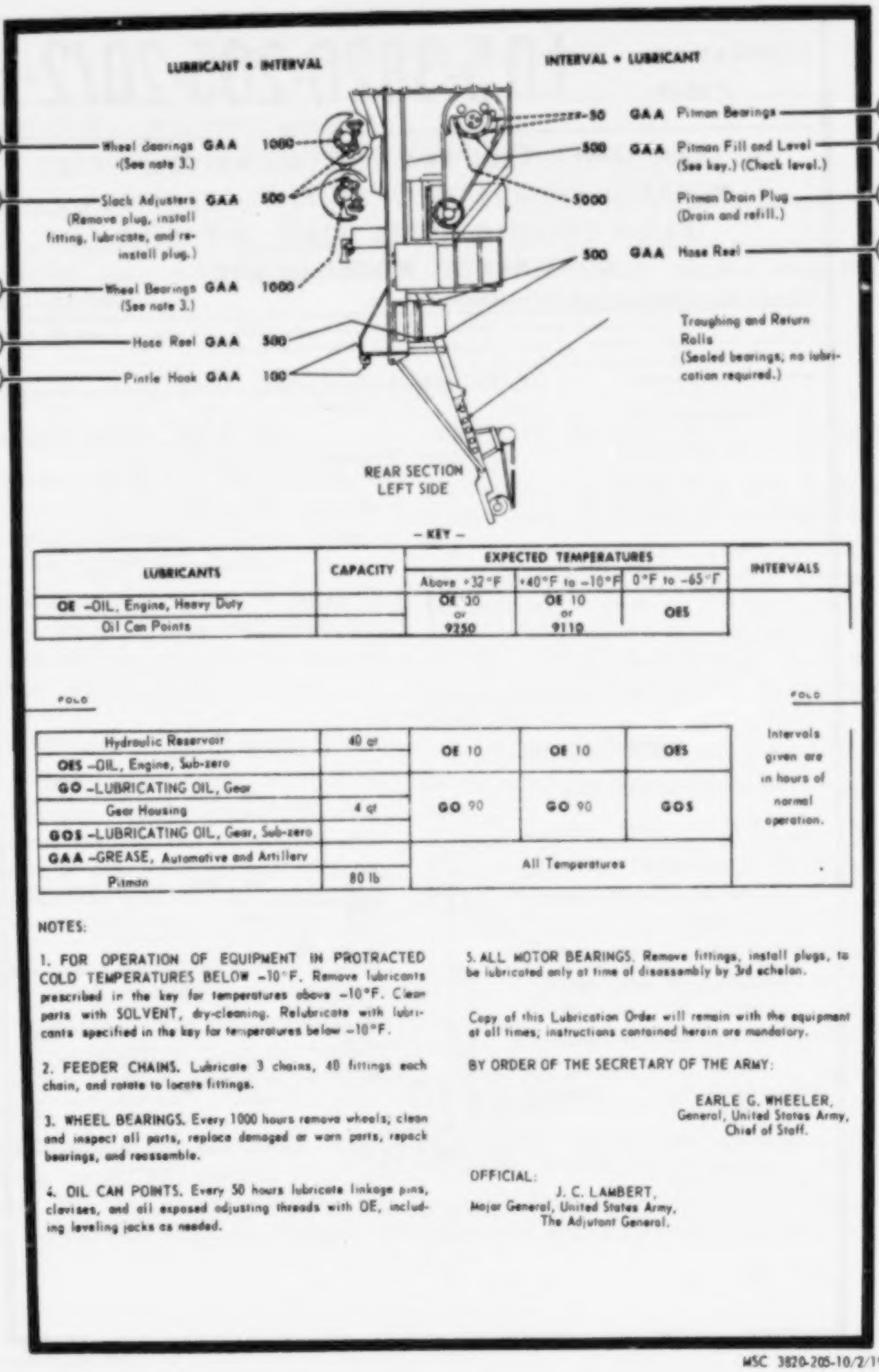
FOLD


LUBRICANT • INTERVAL
INTERVAL • LUBRICANT
① Fifth Wheel Plate GAA 500
② Fifth Wheel Hinge Pin GAA 500
③ Fifth Wheel Hinge Pin GAA 500
④ Wheel Bearings (See note 3.) GAA 1000
⑤ Fifth Wheel Hinge Pin GAA 500
⑥ Lower Hydraulic Cylinder Pin GAA 1000
⑦ Upper Hydraulic Cylinder Pin GAA 1000
⑧ Hydraulic Reservoir Drain (Drain and refill.) 2000
⑨ Hydraulic Reservoir Fill and Level (Fill level 1-1/2 inches from top with cylinder compressed.) (See key.) OE 50
500 GAA Feeder Chains (See note 2.) ⑩
10 GAA Countershaft Bearing ⑪
500 Gear Housing Level (Check level.) ⑫
GO Gear Housing Fill (See key.) ⑬
10 GAA Head Shaft Bearing ⑭
500 Gear Housing Drain (Drain and refill.) ⑮
GAA Vibrating Screen Motor (See note 5.) ⑯
FRONT SECTION
LEFT SIDE

MSC 3820-205-10/2 19 ①

Front

Figure 18. Lubrication order.



LUBRICANT • INTERVAL

INTERVAL • LUBRICANT

(17) Wheel bearings GAA 1000
(See note 3.)

(18) Slack Adjusters GAA 500
(Remove plug, install fitting, lubricate, and re-install plug.)

(19) Wheel Bearings GAA 1000
(See note 3.)

(20) Hose Reel GAA 500

(21) Pintle Hook GAA 100

50 GAA Pitman Bearings (22)

500 GAA Pitman Fill and Level (23)
(See key.) (Check level.)

5000 Pitman Drain Plug (24)
(Drain and refill.)

500 GAA Hose Reel (25)

Troughing and Return Rolls
(Sealed bearings; no lubrication required.)

REAR SECTION
LEFT SIDE

– KEY –

LUBRICANTS	CAPACITY	EXPECTED TEMPERATURES			INTERVALS
		Above +32°F	+40°F to −10°F	0°F to −65°F	
OE –OIL, Engine, Heavy Duty					
Oil Can Points		**OE** 30 or 9250	**OE** 10 or 9110	**OES**	
Hydraulic Reservoir	40 qt	**OE** 10	**OE** 10	**OES**	Intervals given are in hours of normal operation.
OES –OIL, Engine, Sub-zero					
GO –LUBRICATING OIL, Gear					
Gear Housing	4 qt	**GO** 90	**GO** 90	**GOS**	
GOS –LUBRICATING OIL, Gear, Sub-zero					
GAA –GREASE, Automotive and Artillery					
Pitman	80 lb	All Temperatures			

FOLD

FOLD

NOTES:

1. FOR OPERATION OF EQUIPMENT IN PROTRACTED COLD TEMPERATURES BELOW −10°F. Remove lubricants prescribed in the key for temperatures above −10°F. Clean parts with SOLVENT, dry-cleaning. Relubricate with lubricants specified in the key for temperatures below −10°F.

2. FEEDER CHAINS. Lubricate 3 chains, 40 fittings each chain, and rotate to locate fittings.

3. WHEEL BEARINGS. Every 1000 hours remove wheels; clean and inspect all parts, replace damaged or worn parts, repack bearings, and reassemble.

4. OIL CAN POINTS. Every 50 hours lubricate linkage pins, clevises, and all exposed adjusting threads with OE, including leveling jacks as needed.

5. ALL MOTOR BEARINGS. Remove fittings, install plugs, to be lubricated only at time of disassembly by 3rd echelon.

Copy of this Lubrication Order will remain with the equipment at all times; instructions contained herein are mandatory.

BY ORDER OF THE SECRETARY OF THE ARMY:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

OFFICIAL:
J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

MSC 3820-205-10/2/19 (2)

Back

Figure 18—Continued.

LUBRICATION ORDER

LO 5-3820-205-20/2-2

(Supersedes LO 5-3820-205-20/2-2 dated 7 May 1962)

CRUSHER, JAW: DIESEL AND ELECTRIC DRIVEN; WHEEL MOUNTED, PNEUMATIC TIRES; 75 TON PER HOUR (EAGLE CRUSHER MODEL 5157) W/ENGINE CONTINENTAL MODEL SD 802

References: LO 5-3820-205-20/2-1 and -3, TM 5-3820-205-10/2, C 9100-SL

Intervals are based on normal hours of operations. Reduce to compensate for abnormal operations and severe conditions. During inactive periods sufficient lubrication must be performed for adequate preservation.

Clean fittings before lubricating.

Relubricate after washing or fording.

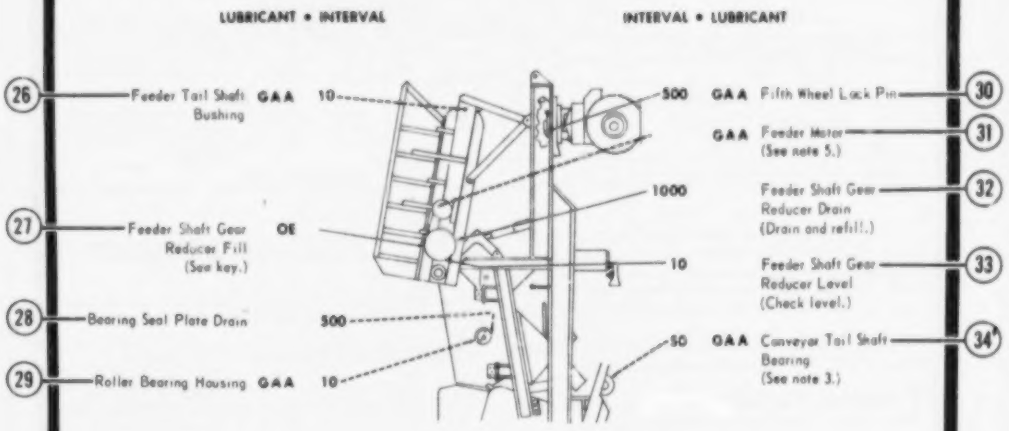
Clean parts with SOLVENT, dry-cleaning, or with OIL, fuel, Diesel. Dry before lubricating.

Lubricate points indicated by dotted arrow shafts on both sides of equipment.

Drain gearcases when hot. Fill and check level.

FOLD

FOLD


LUBRICANT • INTERVAL
INTERVAL • LUBRICANT
(26) Feeder Tail Shaft Bushing GAA 10
(27) Feeder Shaft Gear Reducer Fill (See key.) OE
(28) Bearing Seal Plate Drain 500
(29) Roller Bearing Housing GAA 10
(30) 500 GAA Fifth Wheel Lock Pin
(31) GAA Feeder Motor (See note 5.)
(32) 1000 Feeder Shaft Gear Reducer Drain (Drain and refill.)
(33) 10 Feeder Shaft Gear Reducer Level (Check level.)
(34) 50 GAA Conveyor Tail Shaft Bearing (See note 3.)

FRONT SECTION
RIGHT SIDE

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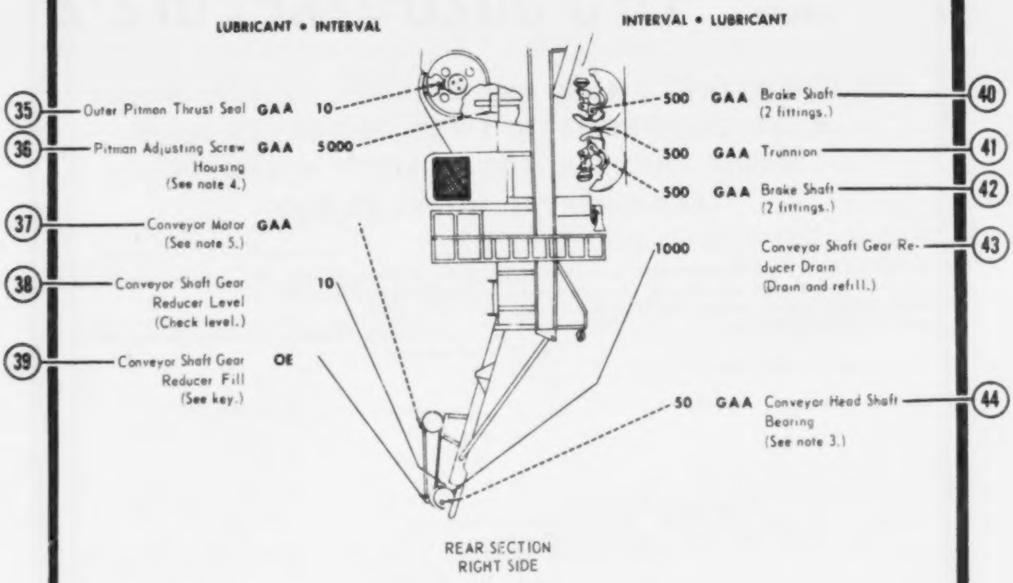
Front

Figure 18—Continued.


LUBRICANT • INTERVAL
INTERVAL • LUBRICANT
35 Outer Pitman Thrust Seal GAA 10
36 Pitman Adjusting Screw Housing (See note 4.) GAA 5000
37 Conveyor Motor (See note 5.) GAA
38 Conveyor Shaft Gear Reducer Level (Check level.) 10
39 Conveyor Shaft Gear Reducer Fill (See key.) OE
500 GAA Brake Shaft (2 fittings.) 40
500 GAA Trunnion 41
500 GAA Brake Shaft (2 fittings.) 42
1000 Conveyor Shaft Gear Reducer Drain (Drain and refill.) 43
50 GAA Conveyor Head Shaft Bearing (See note 3.) 44
REAR SECTION
RIGHT SIDE

— KEY —

LUBRICANTS	CAPACITY	EXPECTED TEMPERATURES			INTERVALS
		Above +32°F	+40°F to −10°F	0°F to −65°F	
OE –OIL, Engine, Heavy Duty		OE 30 or 9250	OE 10 or 9110	OES	Intervals given are in hours of normal operation.
Oil Can Points					
Conveyor Shaft Gear Reducer	3–3/4 qt				
Feeder Shaft Gear Reducer	8 qt				
OES –OIL, Engine, Sub-zero					
GAA –GREASE, Automotive and Artillery		All Temperatures			

NOTES.

1. FOR OPERATION OF EQUIPMENT IN PROTRACTED COLD TEMPERATURES BELOW −10°F. Remove lubricants prescribed in the key for temperatures above −10°F. Clean parts with SOLVENT, dry-cleaning. Relubricate with lubricants specified in the key for temperatures below −10°F.

2. OIL CAN POINTS. Every 50 hours lubricate linkage pins, clevises, and all exposed adjusting threads with OE.

3. CONVEYOR HEAD SHAFT AND TAIL SHAFT BEARINGS. Remove plug to release pressure when lubricating.

4. PITMAN ADJUSTING SCREW HOUSING. Every 5000 hours remove cover, clean and inspect all parts, repack housing, and install cover.

5. ALL MOTOR BEARINGS. Remove fittings, install plugs, to be lubricated only at time of disassembly by 3rd echelon.

Copy of this Lubrication Order will remain with the equipment at all times, instructions contained herein are mandatory.

BY ORDER OF THE SECRETARY OF THE ARMY:

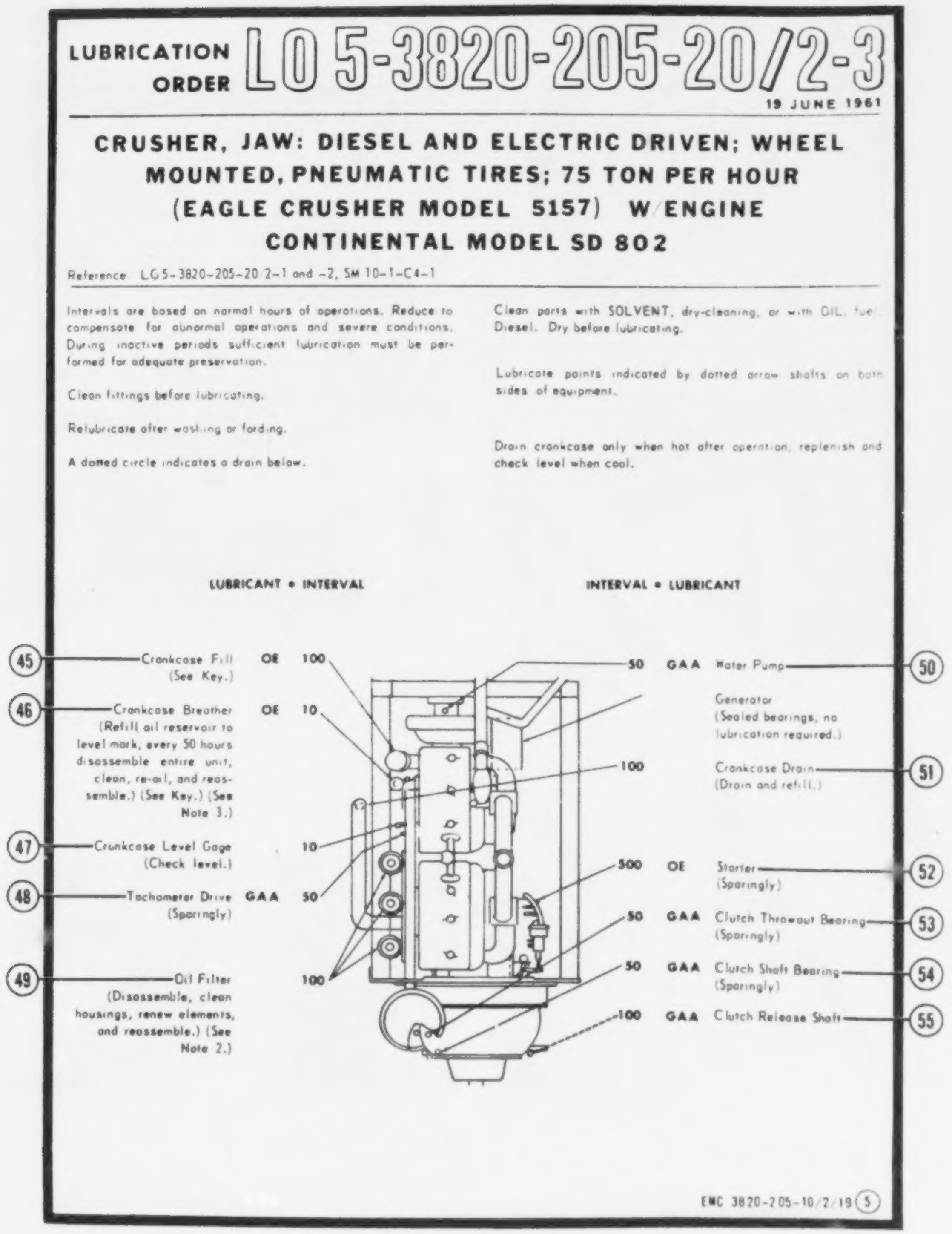
EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

OFFICIAL:
J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

MSC 3820-205-10/2/19 ④

Back

Figure 18—Continued.



LUBRICATION ORDER LO 5-3820-205-20/2-3

19 JUNE 1961

CRUSHER, JAW: DIESEL AND ELECTRIC DRIVEN; WHEEL MOUNTED, PNEUMATIC TIRES; 75 TON PER HOUR (EAGLE CRUSHER MODEL 5157) W/ENGINE CONTINENTAL MODEL SD 802

Reference. LO 5-3820-205-20/2-1 and -2, SM 10-1-C4-1

Intervals are based on normal hours of operations. Reduce to compensate for abnormal operations and severe conditions. During inactive periods sufficient lubrication must be performed for adequate preservation.

Clean fittings before lubricating.

Relubricate after washing or fording.

A dotted circle indicates a drain below.

Clean parts with SOLVENT, dry-cleaning, or with OIL, fuel, Diesel. Dry before lubricating.

Lubricate points indicated by dotted arrow shafts on both sides of equipment.

Drain crankcase only when hot after operation, replenish and check level when cool.

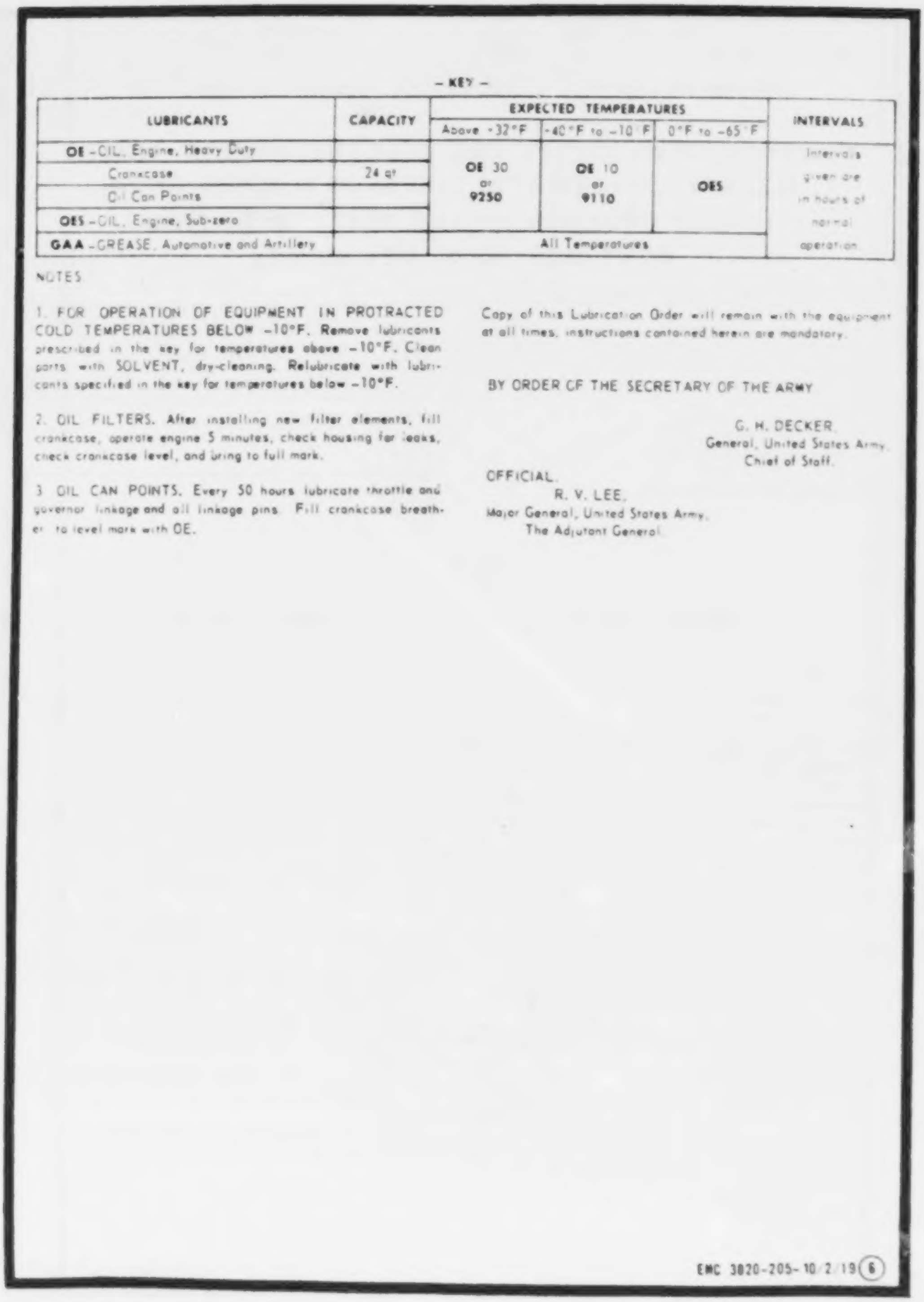
		LUBRICANT	INTERVAL
㊺	Crankcase Fill (See Key.)	OE	100
㊻	Crankcase Breather (Refill oil reservoir to level mark, every 50 hours disassemble entire unit, clean, re-oil, and reassemble.) (See Key.) (See Note 3.)	OE	10
㊼	Crankcase Level Gage (Check level.)		10
㊽	Tachometer Drive (Sparingly)	GAA	50
㊾	Oil Filter (Disassemble, clean housings, renew elements, and reassemble.) (See Note 2.)		100

INTERVAL	LUBRICANT		
50	GAA	Water Pump	㊿
		Generator (Sealed bearings, no lubrication required.)	
100		Crankcase Drain (Drain and refill.)	(51)
500	OE	Starter (Sparingly)	(52)
50	GAA	Clutch Throwout Bearing (Sparingly)	(53)
50	GAA	Clutch Shaft Bearing (Sparingly)	(54)
100	GAA	Clutch Release Shaft	(55)

EMC 3820-205-10/2/19 ⑤

Front

Figure 18—Continued.



– KEY –

LUBRICANTS	CAPACITY	EXPECTED TEMPERATURES			INTERVALS
		Above +32°F	-40°F to -10°F	0°F to -65°F	
OE –OIL, Engine, Heavy Duty		**OE** 30 or **9250**	**OE** 10 or **9110**	**OES**	Intervals given are in hours of normal operation.
Crankcase	24 qt				
Oil Can Points					
OES –OIL, Engine, Sub-zero					
GAA –GREASE, Automotive and Artillery		All Temperatures			

NOTES:

1. FOR OPERATION OF EQUIPMENT IN PROTRACTED COLD TEMPERATURES BELOW –10°F. Remove lubricants prescribed in the key for temperatures above –10°F. Clean parts with SOLVENT, dry-cleaning. Relubricate with lubricants specified in the key for temperatures below –10°F.

2. OIL FILTERS. After installing new filter elements, fill crankcase, operate engine 5 minutes, check housing for leaks, check crankcase level, and bring to full mark.

3. OIL CAN POINTS. Every 50 hours lubricate throttle and governor linkage and all linkage pins. Fill crankcase breather to level mark with OE.

Copy of this Lubrication Order will remain with the equipment at all times; instructions contained herein are mandatory.

BY ORDER OF THE SECRETARY OF THE ARMY

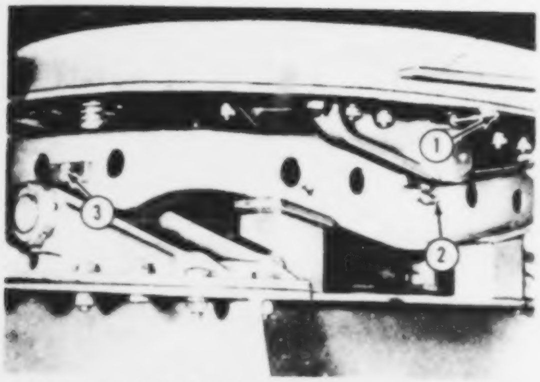
G. H. DECKER,
General, United States Army,
Chief of Staff.

OFFICIAL:
R. V. LEE,
Major General, United States Army,
The Adjutant General.

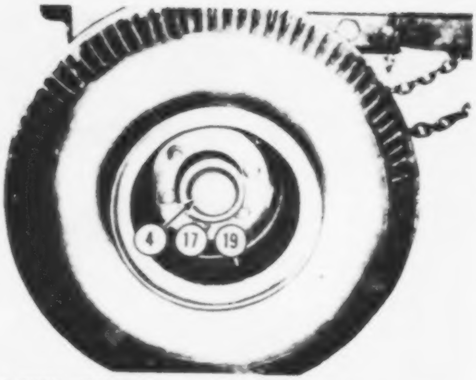
EMC 3020-205-10/2/19 (6)

Back

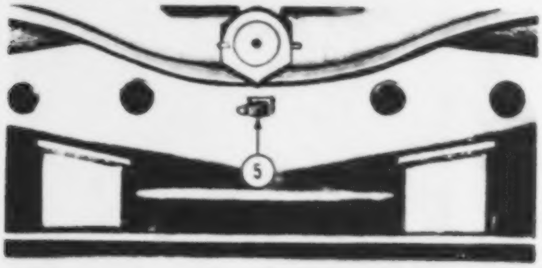
Figure 18—Continued.



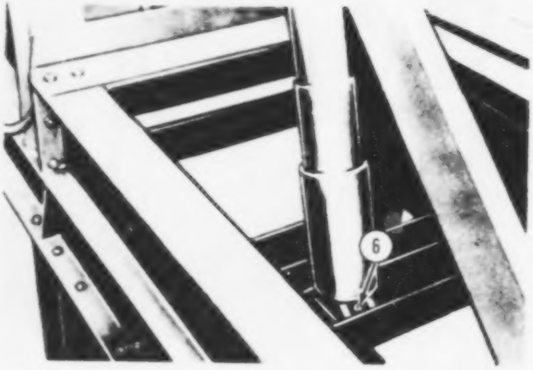
REF.1 FIFTH WHEEL PLATE
REF.2 FIFTH WHEEL HINGE PIN
REF.3 FIFTH WHEEL HINGE PIN



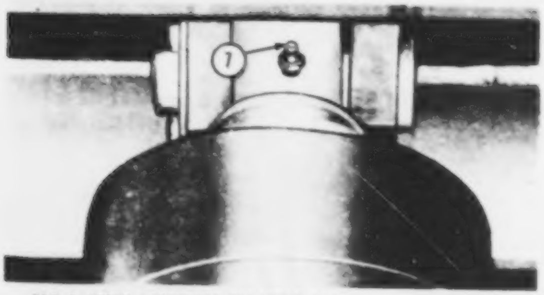
REF. 4 WHEEL BEARINGS
REF.17 WHEEL BEARINGS
REF.19 WHEEL BEARINGS



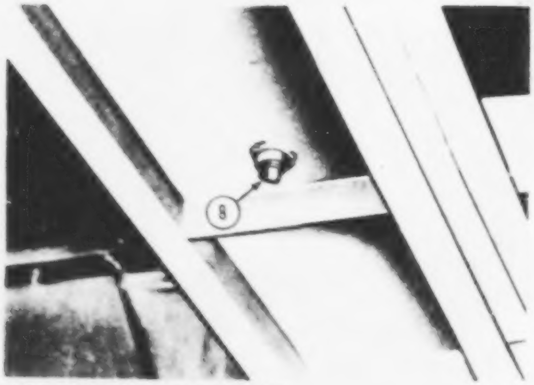
REF.5 FIFTH WHEEL HINGE PIN



REF.6 LOWER HYDRAULIC CYLINDER PIN



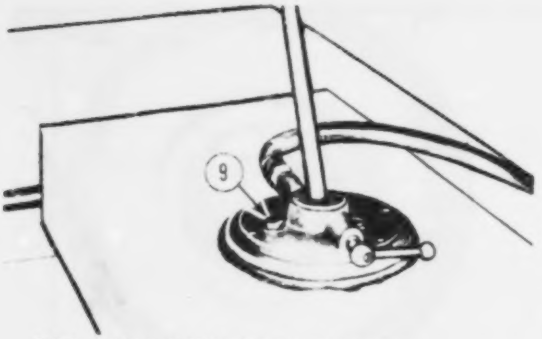
REF.7 UPPER HYDRAULIC CYLINDER PIN



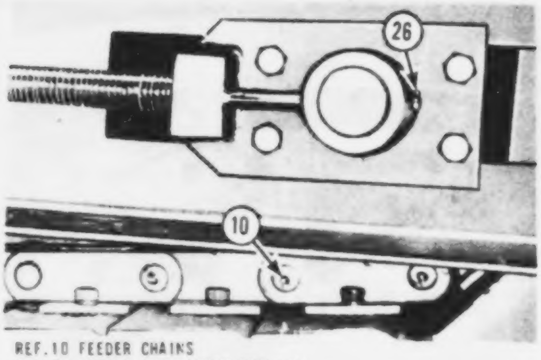
REF.8 HYDRAULIC RESERVOIR DRAIN

EMC 3820-205-10 2 19 (7)

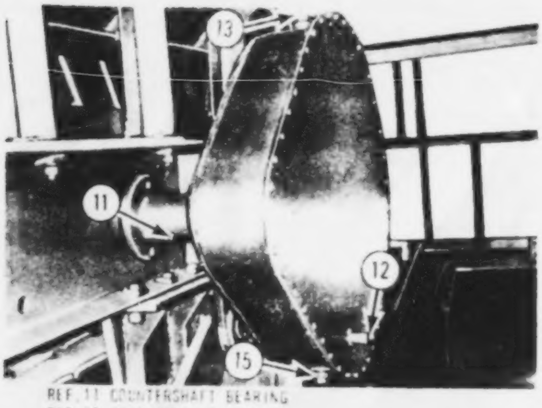
Reference numbers 1 thru 8, 17 and 19
Figure 18—Continued.



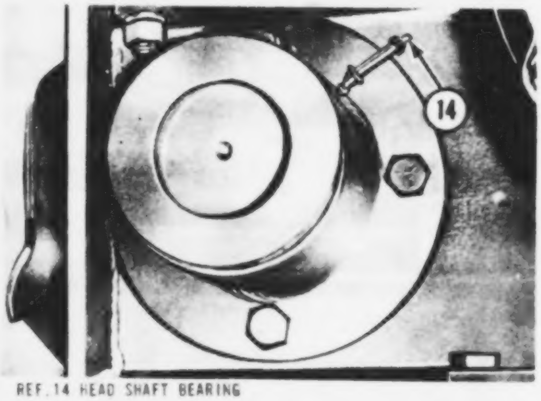
REF. 9 HYDRAULIC RESERVOIR FILL AND LEVEL



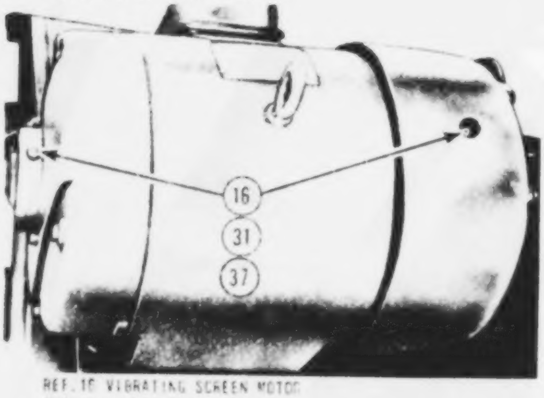
REF. 10 FEEDER CHAINS
REF. 26 FEEDER TAIL SHAFT BUSHING



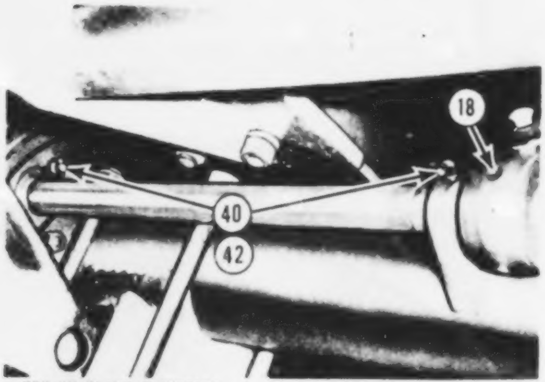
REF. 11 COUNTERSHAFT BEARING
REF. 12 GEAR HOUSING LEVEL
REF. 13 GEAR HOUSING FILL
REF. 15 GEAR HOUSING DRAIN



REF. 14 HEAD SHAFT BEARING



REF. 16 VIBRATING SCREEN MOTOR
REF. 31 FEEDER MOTOR
REF. 37 CONVEYER MOTOR

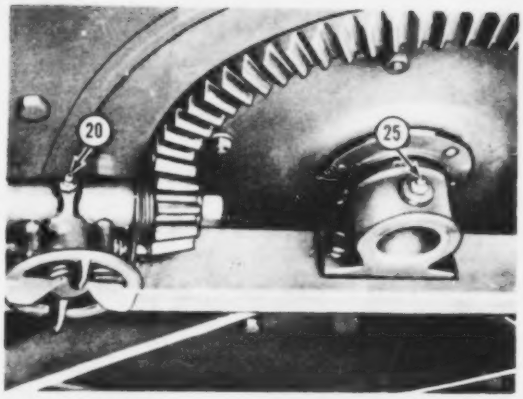


REF. 18 SLACK ADJUSTERS
REF. 40 BRAKE SHAFT
REF. 42 BRAKE SHAFT

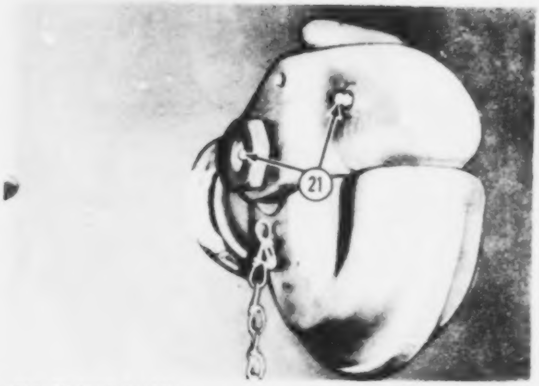
MSC 3820-205-10/2/18 ⑧

Reference numbers 9 thru 16, 18, 26, 31, 37, 40 and 42.

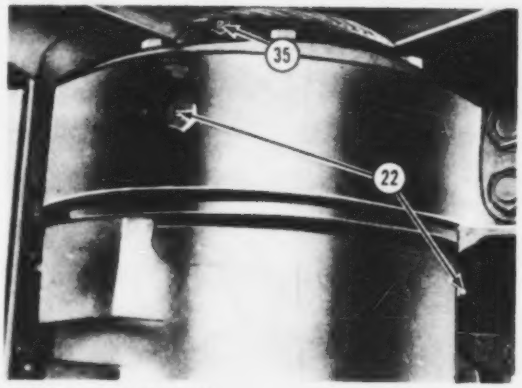
Figure 18—Continued.



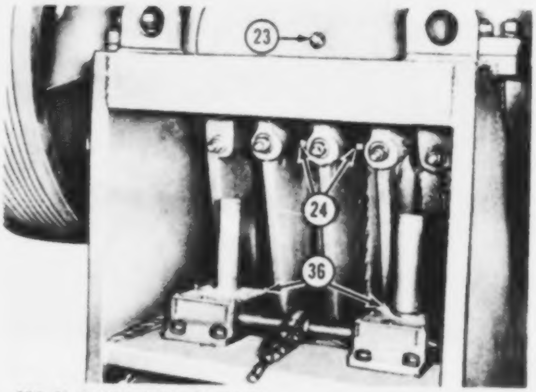
REF. 20 HOSE REEL
REF. 25 HOSE REEL



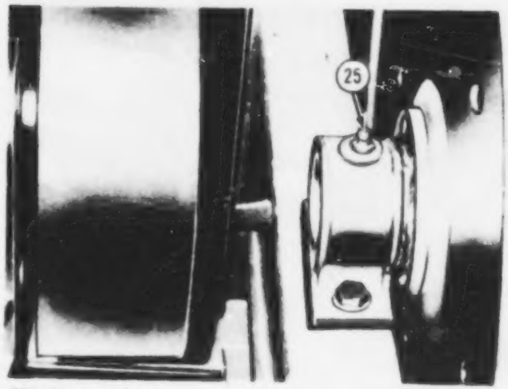
REF. 21 PINTLE HOOK



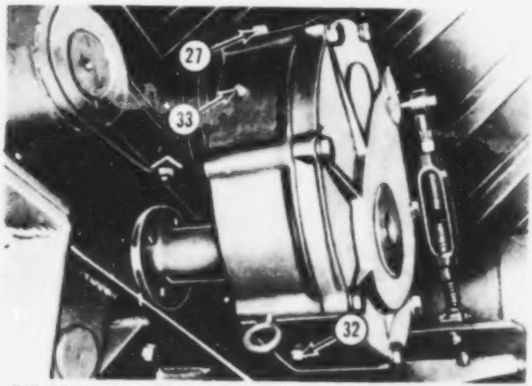
REF. 22 PITMAN BEARINGS
REF. 35 OUTER PITMAN THRUST SEAL



REF. 23 PITMAN FILL AND LEVEL
REF. 24 PITMAN DRAIN PLUG
REF. 36 PITMAN ADJUSTING SCREW HOUSING



REF. 25 HOSE REEL

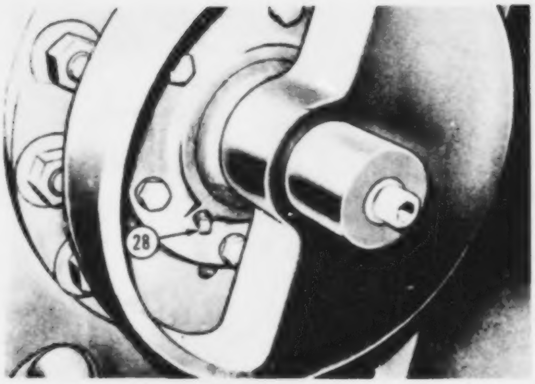


REF. 27 FEEDER SHAFT GEAR REDUCER FILL
REF. 32 FEEDER SHAFT GEAR REDUCER DRAIN
REF. 33 FEEDER SHAFT GEAR REDUCER LEVEL

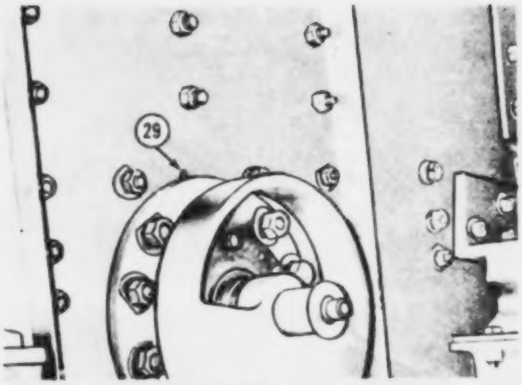
EMC 3820-205-10/2-19 ⑨

References numbers 20 thru 25, 27, 32, 33, 35, 36

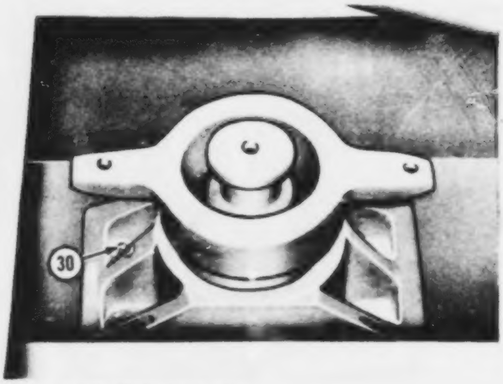
Figure 18—Continued.



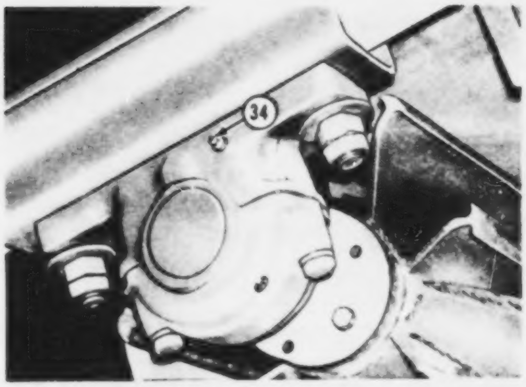
REF. 28 BEARING SEAL PLATE DRAIN



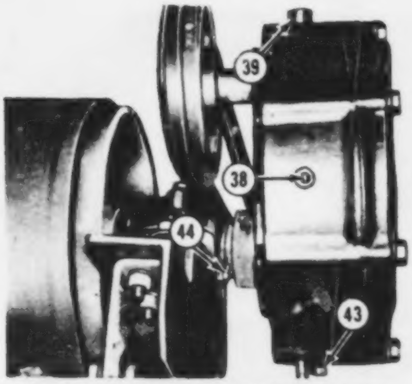
REF. 29 ROLLER BEARING HOUSING



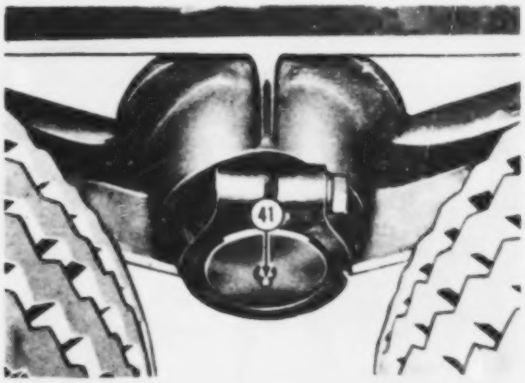
REF. 30 FIFTH WHEEL LOCK PIN



REF. 34 CONVEYOR TAIL SHAFT BEARING



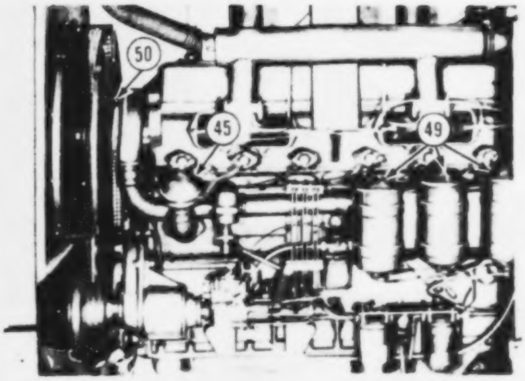
REF. 38 CONVEYOR SHAFT GEAR REDUCER LEVEL
REF. 39 CONVEYOR SHAFT GEAR REDUCER FILL
REF. 43 CONVEYOR SHAFT GEAR REDUCER DRAIN
REF. 44 CONVEYOR HEAD SHAFT BEARING



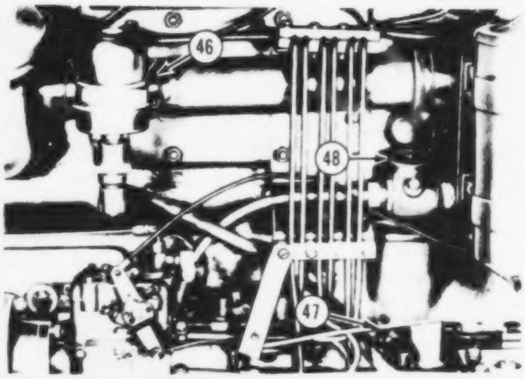
REF. 41 TRUNNION

EMC 3820-205-10/2 19 ⑩

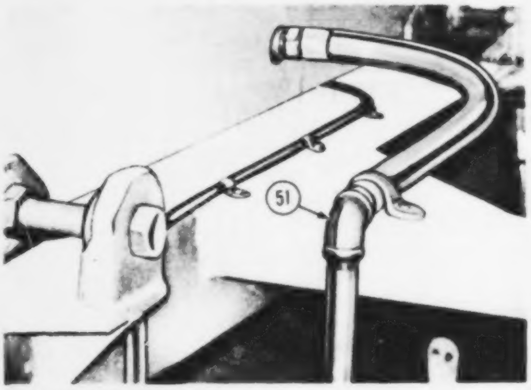
Reference numbers 28 thru 30, 34, 38, 39, 41, 43 and 44
Figure 18—Continued.



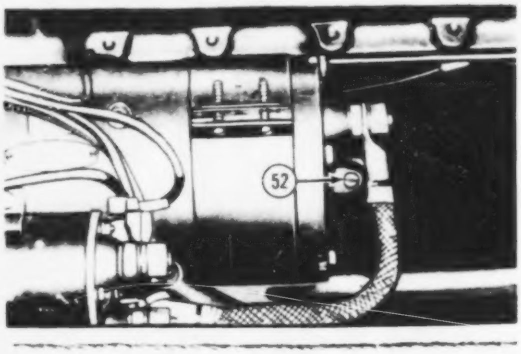
REF. 45 CRANKCASE FILL
REF. 49 OIL FILTER
REF. 50 WATER PUMP



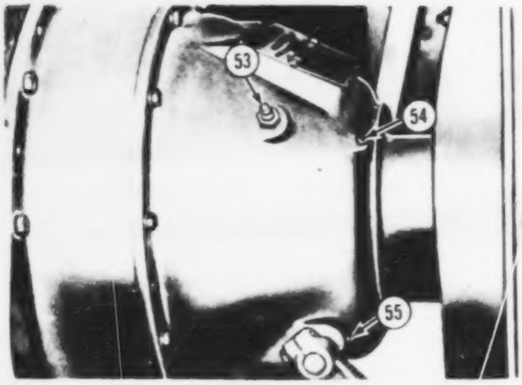
REF. 46 CRANKCASE BREATHER
REF. 47 CRANKCASE LEVEL GAGE
REF. 48 TACHOMETER DRIVE



REF. 51 CRANKCASE DRAIN



REF. 52 STARTER



REF. 53 CLUTCH THROWOUT BEARING
REF. 54 CLUTCH SHAFT BEARING
REF. 55 CLUTCH RELEASE SHAFT

EMC 3820-205-10 2 19 ⑪

Reference numbers 45 thru 55
Figure 18—Continued.

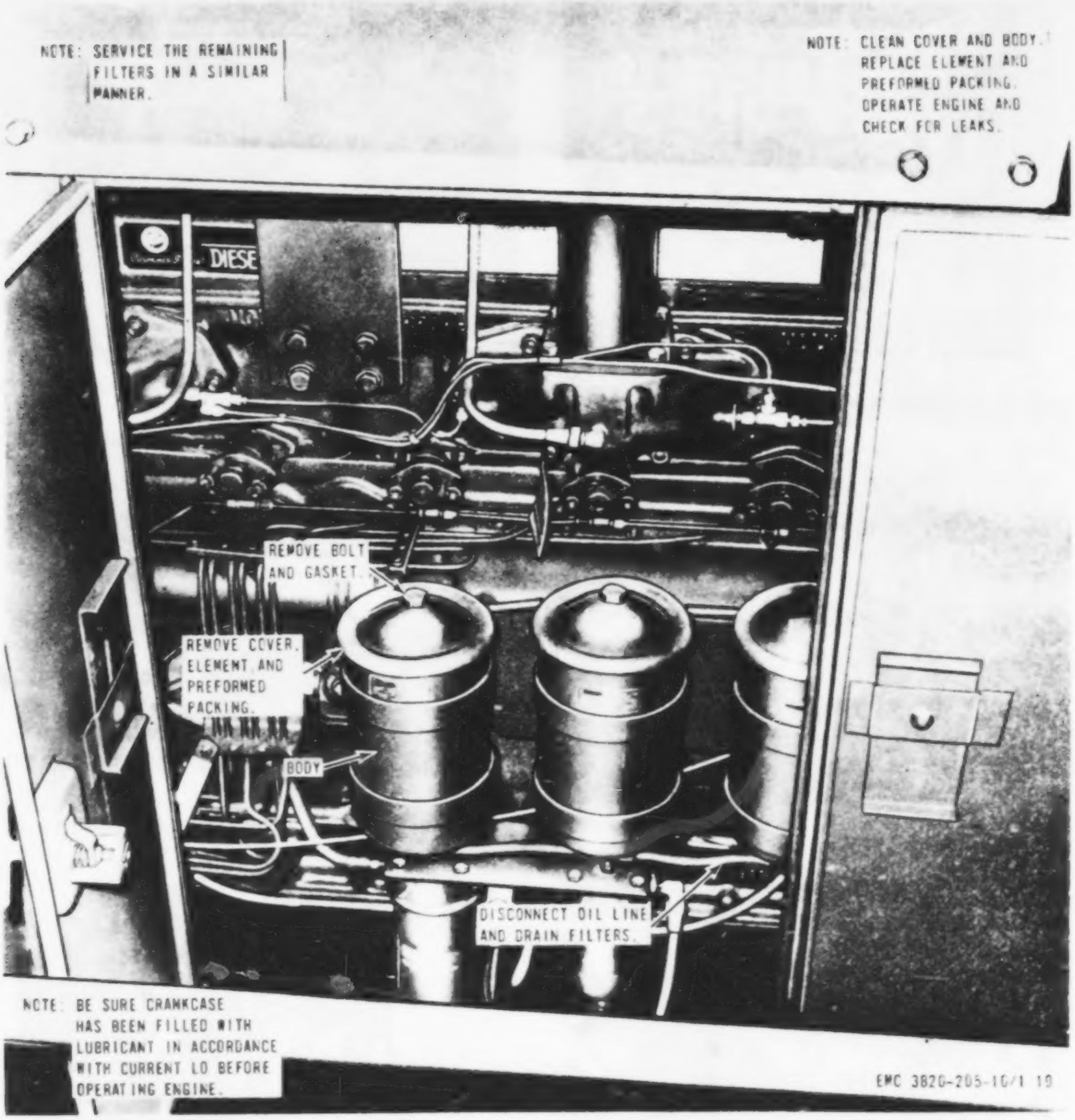

NOTE: SERVICE THE REMAINING FILTERS IN A SIMILAR MANNER.
NOTE: CLEAN COVER AND BODY. REPLACE ELEMENT AND PREFORMED PACKING. OPERATE ENGINE AND CHECK FOR LEAKS.
DIESE
REMOVE BOLT AND GASKET.
REMOVE COVER, ELEMENT, AND PREFORMED PACKING.
BODY
DISCONNECT OIL LINE AND DRAIN FILTERS.
NOTE: BE SURE CRANKCASE HAS BEEN FILLED WITH LUBRICANT IN ACCORDANCE WITH CURRENT LO BEFORE OPERATING ENGINE.
EMC 3820-205-10/1 19

Figure 19. Oil filter assemblies, service.

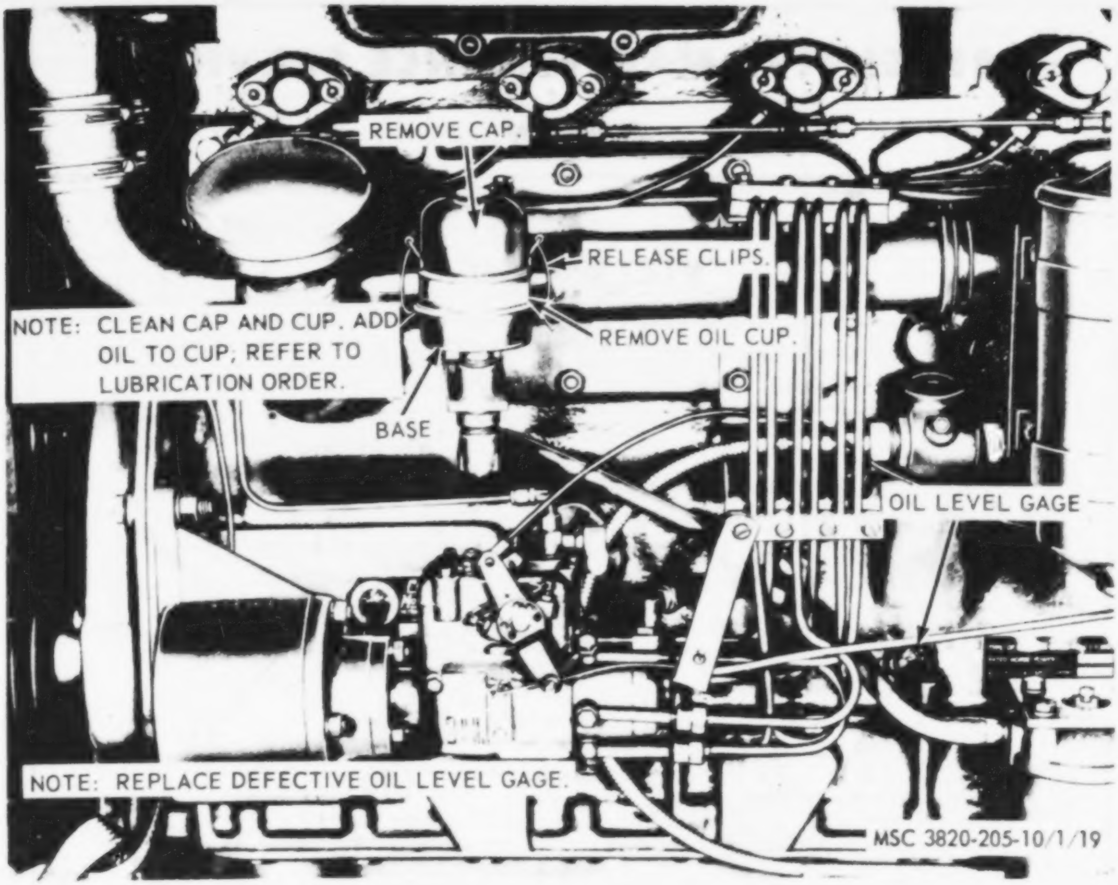

REMOVE CAP.
RELEASE CLIPS.
NOTE: CLEAN CAP AND CUP. ADD OIL TO CUP; REFER TO LUBRICATION ORDER.
REMOVE OIL CUP.
BASE
OIL LEVEL GAGE
NOTE: REPLACE DEFECTIVE OIL LEVEL GAGE.
MSC 3820-205-10/1/19

Figure 20. Crankcase breather, service.

Section III. PREVENTIVE MAINTENANCE SERVICES

30. General

To insure that the jaw crusher is ready for operation at all times, it must be inspected systematically, so that defects may be discovered and corrected before they result in serious damage or failure. The necessary Preventive Maintenance Services to be performed are listed and described in paragraph 31. The item numbers indicate the sequence of minimum inspection requirements. Defects discovered during operation of the jaw crusher shall be noted for future correction, to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noticed during operation which would damage the equipment if operation were continued. All deficiencies and shortcomings will be recorded together with the corrective action taken on DA Form 2404 at the earliest possible opportunity.

31. Daily Preventive Maintenance Services

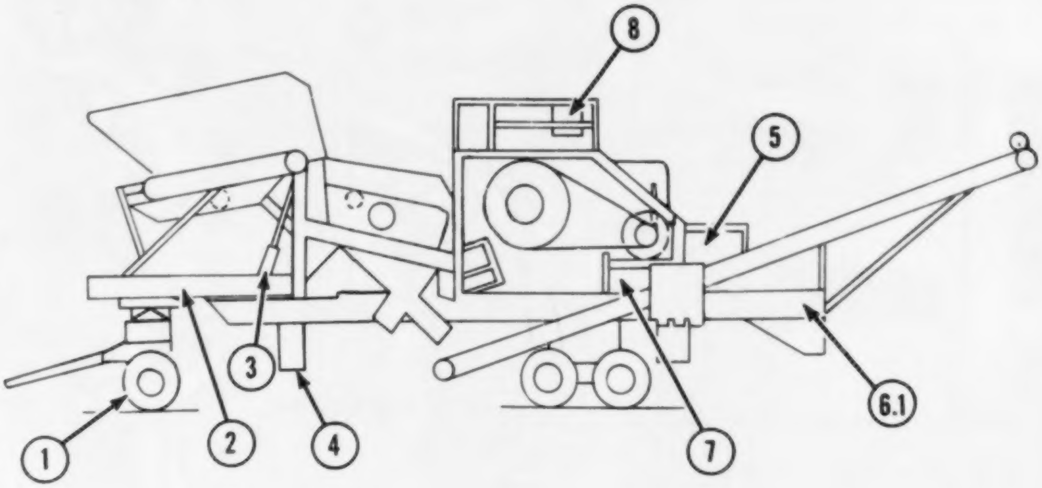
This paragraph contains an illustrated tabulated listing of preventive maintenance services which must be performed by the operator. The item numbers are listed consecutively and indicate the sequence of minimum requirements. Refer to figure 21 for Daily Preventive Maintenance Services.

PREVENTIVE MAINTENANCE SERVICES

DAILY

TM 5-3820-205-10/2 JAW CRUSHER

(EAGLE MODEL 5157)

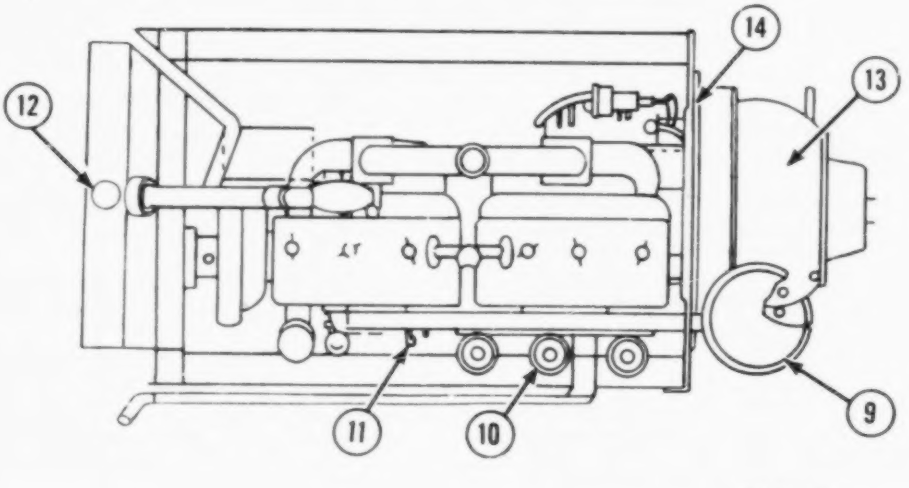


LUBRICATE IN ACCORDANCE WITH CURRENT LUBRICATION ORDER

ITEM		PAR. REF
1	TIRES. Perform visual check for proper inflation. Correct air pressure is 100 psi.	
2	AIR SYSTEM. Drain condensation from receiver and filters after use.	
3	HYDRAULIC SYSTEM. Check fluid level. See LO. Check for proper operation.	
4	LEVELING JACKS. Check for settling. Check to see that crusher is level.	

Figure 21. Daily preventive maintenance services.

ITEM		PAR. REF
5	BATTERIES. Check electrolyte level and hand tightness of connections. Fill to 1/2 inch above plates. In freezing weather run the engine one hour after adding water. (Weekly)	
6.1	FUEL TANK. Check level. Drain sediment from tank. (Biweekly).	
7	FIRE EXTINGUISHER. Inspect for broken seal.	
8	OPERATOR'S ELECTRICAL CONTROL BOX. Check for proper operation. Make sure switches are in correct positions and cables are connected. Make sure ground rod is securely mounted and there are no loose connections. Check for tightly sealed box. WARNING: Do not connect electrical power or operate the equipment if the ground connection is not properly installed. Death by electrocution could result from contacting ungrounded equipment should some electrical fault develop in power equipment or lines.	


CONTINENTAL MODEL SD-802

ENGINE

LUBRICATE IN ACCORDANCE WITH CURRENT LUBRICATION ORDER

ITEM		PAR. REF

Figure 21—Continued.

ITEM		PAR. REF
9	AIR CLEANER. Check to see if red signal is visible.	
10	PRIMARY FUEL FILTER. Drain sediment. (Weekly).	55
11	ENGINE OIL LEVEL. Check oil level. Add oil to proper level.	
12	RADIATOR. Check coolant level. Fill to 2 inches below filler neck.	
13	MASTER CLUTCH. Check for proper operation.	
14	CONTROLS AND INSTRUMENTS. Normal readings are: Coolant temperature 165°F. to 185°F. Engine oil pressure 55 to 65 psi Battery–generator indicator Green Range Tachometer 1,400 rpm	
	NOTE: OPERATION. During operation check all controls for proper operation.	

MSC 3820-205-10/2/21

Figure 21—Continued.

Section IV. TROUBLESHOOTING

32. General

This section provides information useful in diagnosing and correcting unsatisfactory operation or failure of the jaw crusher, and its components. Each trouble symptom stated is followed by a list of probable causes of the trouble. The possible remedy recommended is described opposite the probable cause. Any operational trouble beyond the scope of the operator or crew shall be reported to organizational maintenance.

33. Engine Hard to Start, or Fails to Start

Probable cause	*Possible remedy*
Atmospheric temperature low	Use ether starting aid (par. 25).
Dirt, gum, or water in fuel lines or tank	Service fuel tank (par. 57).
Air trapped in fuel line	Bleed fuel line (par. 54).
Fuel filter clogged	Replace filters (par. 55).
Throttle lever not in START position	Place throttle lever in START position.

34. Engine Starts But Will Not Continue to Run

Probable cause	*Possible remedy*
Air cleaner clogged	Service air cleaner (par. 56).
Fuel filter clogged	Clean fuel filter (par. 55).
Inadequate fuel supply	Service fuel tank (par. 57).

35. Engine Operates Erratically or Lacks Power

Probable cause	*Possible remedy*
Dirt, gum, or water in fuel	Service the fuel tank and lines (par. 57).
Air cleaner clogged	Service air cleaner (par. 56).
Air in fuel system	Bleed the fuel lines (par. 54).
Fuel filters clogged	Replace fuel filters (par. 55).

36. Exhaust Smoke Excessive

Probable cause	*Possible remedy*
Crankcase oil level too high	Drain oil until proper level is obtained. Refer to LO 5-3820-205-20/2.
Engine cold causing poor combustion	Close doors on engine unit and periodically watch temperature gage. Report to organizational maintenance if condition persists.
Engine overloaded	Reduce load on engine.
Air cleaner clogged	Service air cleaner (par. 56).

37. Engine Overheats

Probable cause	*Possible remedy*
Coolant level low	Replenish coolant (par. 59).
Cooling system dirty or clogged	Service cooling system (par. 59).
Fan belt loose or broken	Tighten fan belt (par. 60). Report a broken fan belt to organizational maintenance.
Water pump faulty	Report a defective water pump to organizational maintenance.
Engine overloaded	Reduce the flow of aggregate into the crusher.
Exhaust restricted	Remove restriction or report or organizational maintenance.

38. Engine Knocks or Develops Noise

Probable cause	*Possible remedy*
Accessory mounting loose	Tighten accessory or report to organizational maintenance.
Crankcase oil supply low	Stop engine and check oil level. Replenish oil as needed. Refer to LO 5-3820-205-20/2.
Loose main or rod bearing	Report to organizational maintenance.

39. Engine Stops Suddenly

Probable cause	*Possible remedy*
Fuel tank empty	Fill fuel tank (par. 57).
Water in fuel	Service fuel tank (par. 57).
Engine overheats (safety control operated)	Inspect the coolant level, fan belt adjustment, and radiator for obstructions. Correct deficiencies or report to organizational maintenance.
Oil pressure low (safety control operated)	Check oil level in the crankcase. Replenish if low (LO 5-3820-205-20/2).
Air trapped in fuel lines	Bleed the fuel lines (par. 54).
Restricted air intake	Service the air cleaner (par. 56).

40. Conveyor Belts do Not Run, or Run at Uneven Speed

Probable cause	*Possible remedy*
Too much slack in belts	Adjust the conveyor belts (par. 77).
Overload device in motor circuit tripped	Correct the cause of overload, and reset the circuit breaker or magnetic starter.
Belt roller bearings frozen	Inspect the bearing for this condition. Report defective rollers to organizational maintenance.
Lagging on drive pulley worn out or loose	Report damaged lagging to organizational maintenance.
Grease has collected on drive sheave or belt	Remove grease from belt and drive sheave with approved cleaning solvent.

41. Conveyor Belts Run to One Side

Probable cause	*Possible remedy*
Drive pulleys are loose or out of alinement	Report condition to organizational maintenance.
Troughing and under conveyor rollers out of adjustment	Report condition to organizational maintenance.
Belt lacing torn, loose, or broken at one end	Report to organizational maintenance.
Dirt or foreign matter built-up on drive pulleys, rollers, or on conveyor belt.	Inspect the belt pulley, and rollers for dirt or foreign matter. Remove the accumulated deposits and clean with an approved cleaning solvent.

42. Crusher Jaw not Operating Correctly

Probable cause	*Possible remedy*
Jaw adjustment incorrect	Adjust jaw (par. 70).
Jaw drive belts slipping	Report condition to organizational maintenance.
Engine clutch slips	Adjust clutch (par. 66). If condition continues report to organizational maintenance.

43. Screen Will Not Vibrate

Probable cause	*Possible remedy*
Drive belts slipping or broken	Adjust V-belts (par. 73). Report broken drive belts to organizational maintenance.
Motor circuit breaker or magnetic starter trips	Correct cause of tripping or report to organizational maintenance.

44. Screen Vibrates Excessively

Probable cause	*Possible remedy*
Rubber mounts broken or deteriorated	Report this condition to organizational maintenance.
Motor drive belts slipping	Adjust V-belts (par. 71).

45. Feeder Will Not Operate, or Works Slowly

Probable cause	*Possible remedy*
Drive belts slipping or broken	Inspect V-belts for slipping and adjust as required (par. 73). Peport broken V-belts to organizational maintenance.
Motor circuit breaker or magnetic switch tripped, or continues to trip.	Correct cause of tripping or report to organizational maintenance.
Frozen bearing in feeder rollers	Report this condition to organizational maintenance.

46. Electric Motors Will Not Run

Probable cause	*Possible remedy*
Circuit breaker or relay overload tripped	Reset circuit breaker or relay overload (par. 16).
Voltage source fluctuating	Report this condition to organizational maintenance.

47. Electric Motors Run Too Hot

Probable cause	*Possible remedy*
Motors overloaded	Check condition of machinery driven by the motor. Correct deficiencies or report to organizational maintenance.
Trash or foreign matter obstructing air flow through motors.	Remove any obstruction impeding air flow through motors.
Bearings need lubrication	Inspect bearings for obvious damage and lubricate (LO 5–3820–205–20/2).
Defective motor	Report defective motor to organizational maintenance.

Section V. FIELD EXPEDIENT REPAIRS

48. General

Upon decision of the unit commander during emergencies, the following expedient repairs may be used to temporarily correct operational troubles in the field where supplies and repair parts for normal corrective maintenance are not available. Equipment so repaired must be removed from operation as soon as possible and properly repaired before being placed in operation again.

49. Engine Gradually Loses Power

Trouble	*Expedient remedy*
Fuel filter clogged	Discard the fuel filter element and operate the engine without filters until replacements are available.

50. Engine Overheats

Trouble	*Expedient remedy*
Coolant thermostat defective	Remove thermostat and run engine till replacement is available.

51. Movable Jaw Belt Breaks

Trouble	*Expedient remedy*
Movable jaw belt broken	Remove broken V-belt and operate with remaining belts until broken belt can be replaced.

52. Loss of Lubricating Oil

Trouble	*Expedient remedy*
Small hole in crankcase oil pan	Plug hole with wooden plug or metal screw.
Damaged oil line	Tape or wrap the oil line with a suitable material until a new oil line can be installed.

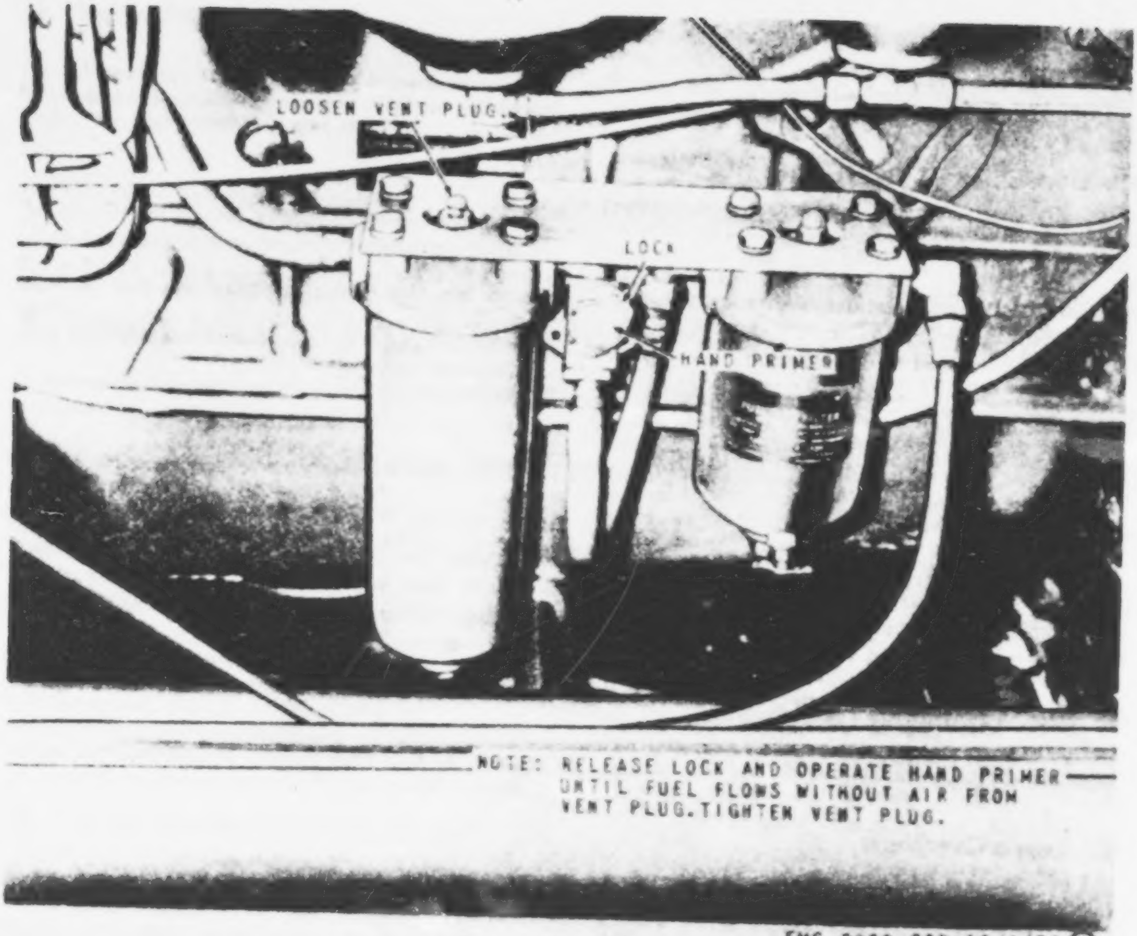
Section VI. FUEL SYSTEM

53. General

The engine fuel system consists of a 100 gallon fuel tank, fuel line and fittings, primary fuel filter, primer pump, secondary fuel filter, fuel injection pump, and six fuel injectors.

54. Bleeding the Fuel System

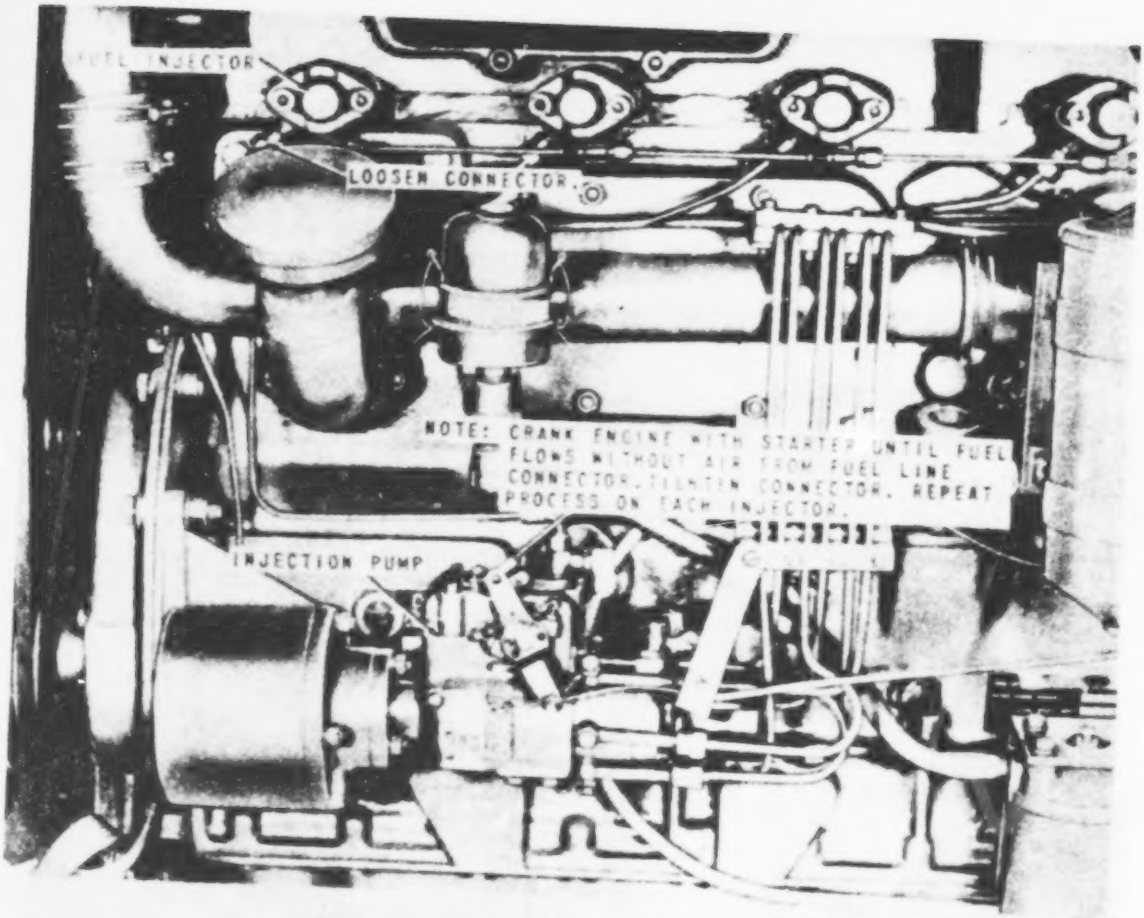
Bleed the fuel system as instructed on figure 22.


LOOSEN VENT PLUG.
LOCK
HAND PRIMER

NOTE: RELEASE LOCK AND OPERATE HAND PRIMER UNTIL FUEL FLOWS WITHOUT AIR FROM VENT PLUG. TIGHTEN VENT PLUG.

EMC 3820-205-10/1/23 ①

Figure 22. Bleeding the fuel system.


FUEL INJECTOR
LOOSEN CONNECTOR.
INJECTION PUMP

NOTE: CRANK ENGINE WITH STARTER UNTIL FUEL FLOWS WITHOUT AIR FROM FUEL LINE CONNECTOR. TIGHTEN CONNECTOR. REPEAT PROCESS ON EACH INJECTOR.

EMC 3820-205-10/1/23②

Figure 22—Continued.

55. Primary and Secondary Fuel Filter Service

Service the primary and secondary fuel filters as instructed on figure 23.

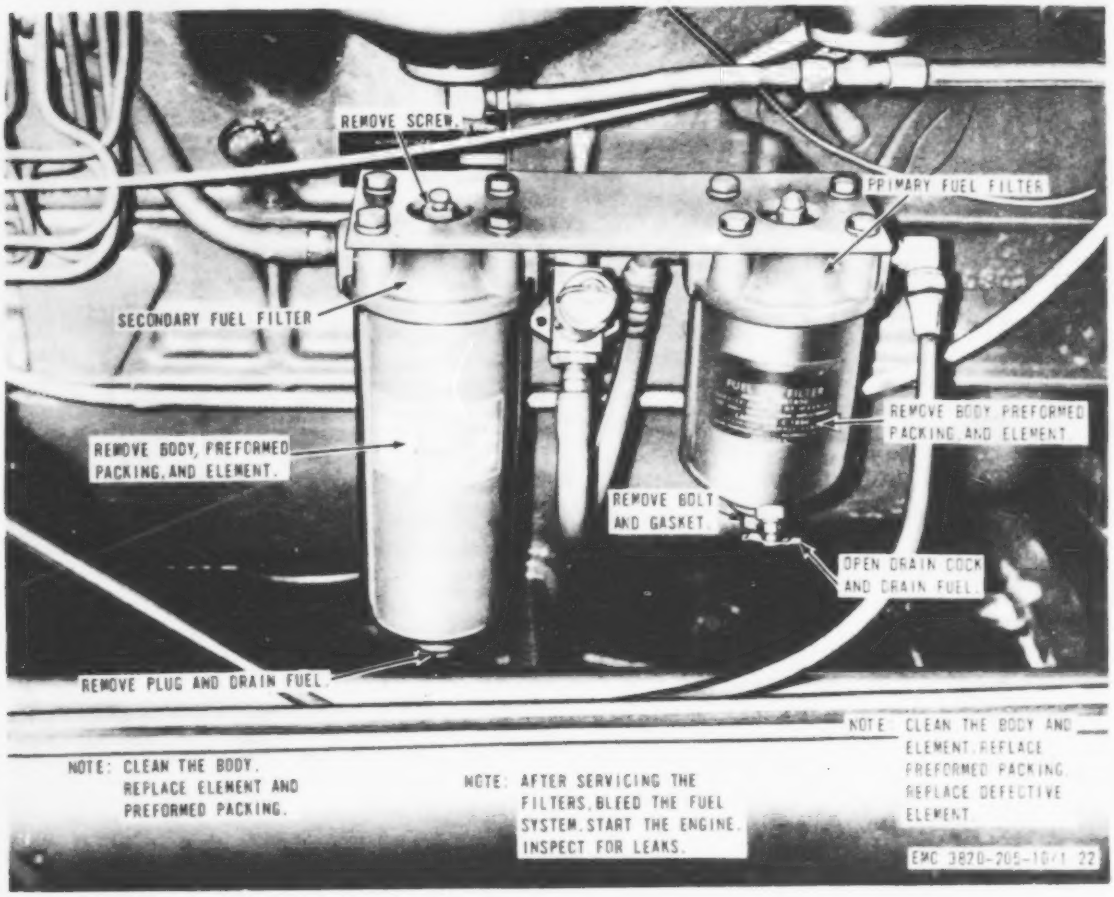
Note. Service the fuel filters weekly.

56. Air Cleaner Service

Service the air cleaner as instructed on figure 24.

57. Fuel Tank and Strainer Service

Service the fuel tank and strainer as instructed on figure 25.



REMOVE SCREW.

REMOVE BODY, PREFORMED PACKING, AND ELEMENT.

REMOVE BODY PREFORMED PACKING AND ELEMENT.

REMOVE BOLT AND GASKET.

OPEN DRAIN COCK AND DRAIN FUEL.

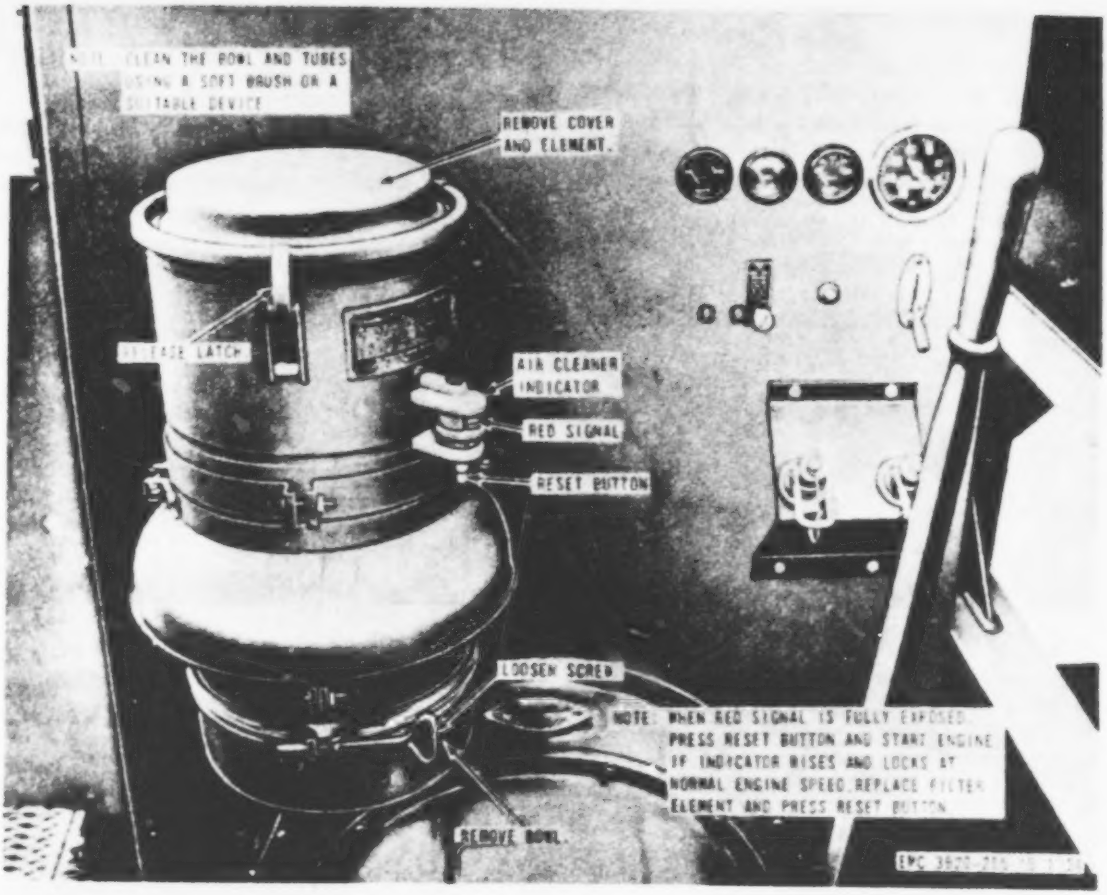
REMOVE PLUG AND DRAIN FUEL.

NOTE: CLEAN THE BODY. REPLACE ELEMENT AND PREFORMED PACKING.

NOTE: AFTER SERVICING THE FILTERS, BLEED THE FUEL SYSTEM. START THE ENGINE. INSPECT FOR LEAKS.

NOTE: CLEAN THE BODY AND ELEMENT. REPLACE PREFORMED PACKING. REPLACE DEFECTIVE ELEMENT.

Figure 23. Primary and secondary fuel filter, service.

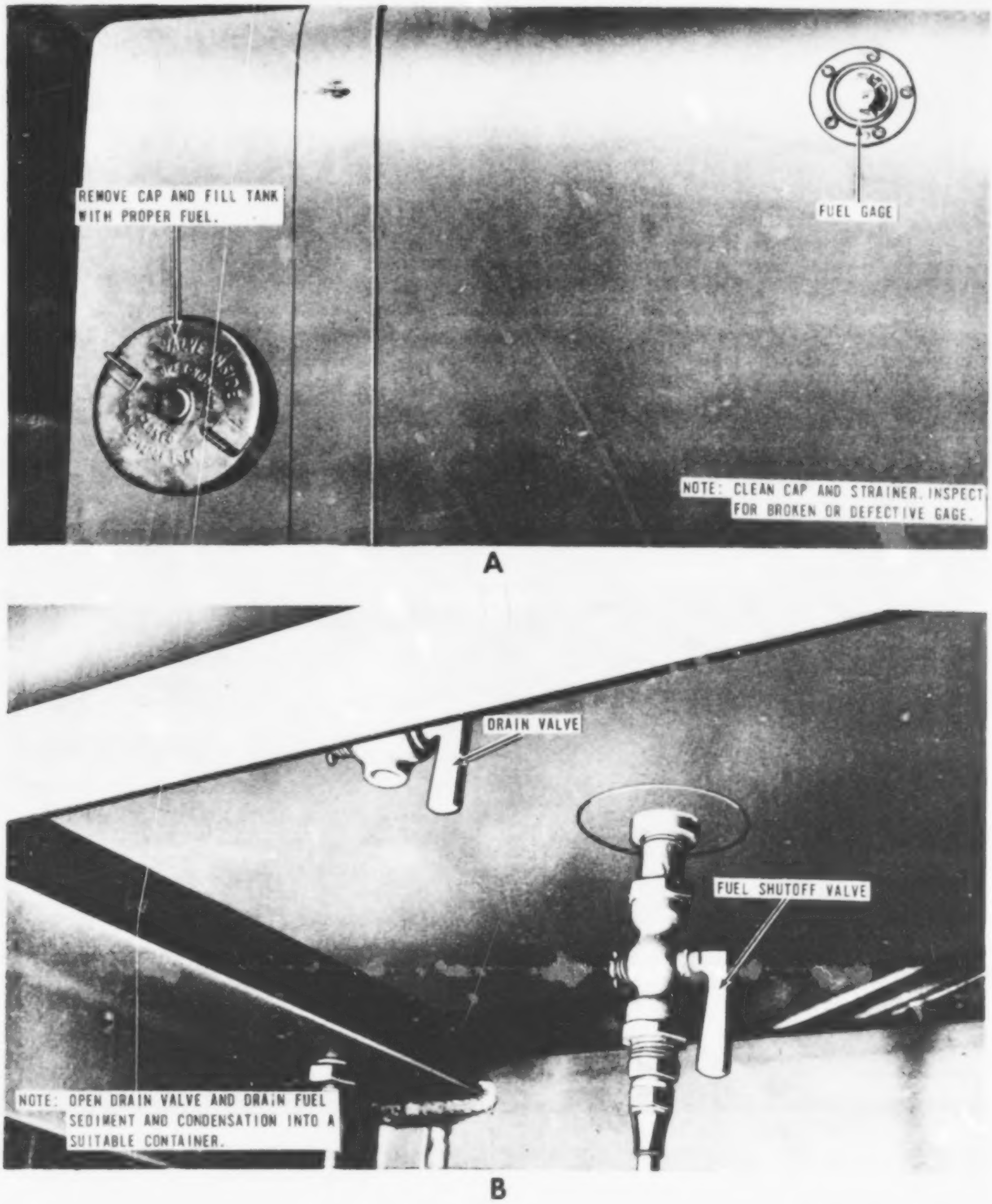


NOTE: CLEAN THE BOWL AND TUBES USING A SOFT BRUSH OR A SUITABLE DEVICE

REMOVE COVER AND ELEMENT.
RELEASE LATCH
AIR CLEANER INDICATOR
RED SIGNAL
RESET BUTTON
LOOSEN SCREW
REMOVE BOWL.

NOTE: WHEN RED SIGNAL IS FULLY EXPOSED, PRESS RESET BUTTON AND START ENGINE. IF INDICATOR RISES AND LOCKS AT NORMAL ENGINE SPEED, REPLACE FILTER ELEMENT AND PRESS RESET BUTTON.

Figure 24. Air cleaner, service.


FUEL GAGE
A
DRAIN VALVE
FUEL SHUTOFF VALVE
B

REMOVE CAP AND FILL TANK WITH PROPER FUEL.

NOTE: CLEAN CAP AND STRAINER. INSPECT FOR BROKEN OR DEFECTIVE GAGE.

NOTE: OPEN DRAIN VALVE AND DRAIN FUEL SEDIMENT AND CONDENSATION INTO A SUITABLE CONTAINER.

EMC 3820-205-10/1/25

A—Fuel tank cap and strainer.
B—Fuel tank drain.

Figure 25. Fuel tank and strainer.

Section VII. COOLING SYSTEM

58. General

The liquid cooling system consists of the radiator, hose, lines, fittings, water pump, fan, and coolant passages in the cylinder head and block. The coolant temperature is regulated from 165° to 185° F by two thermostats located inside the thermostat housing.

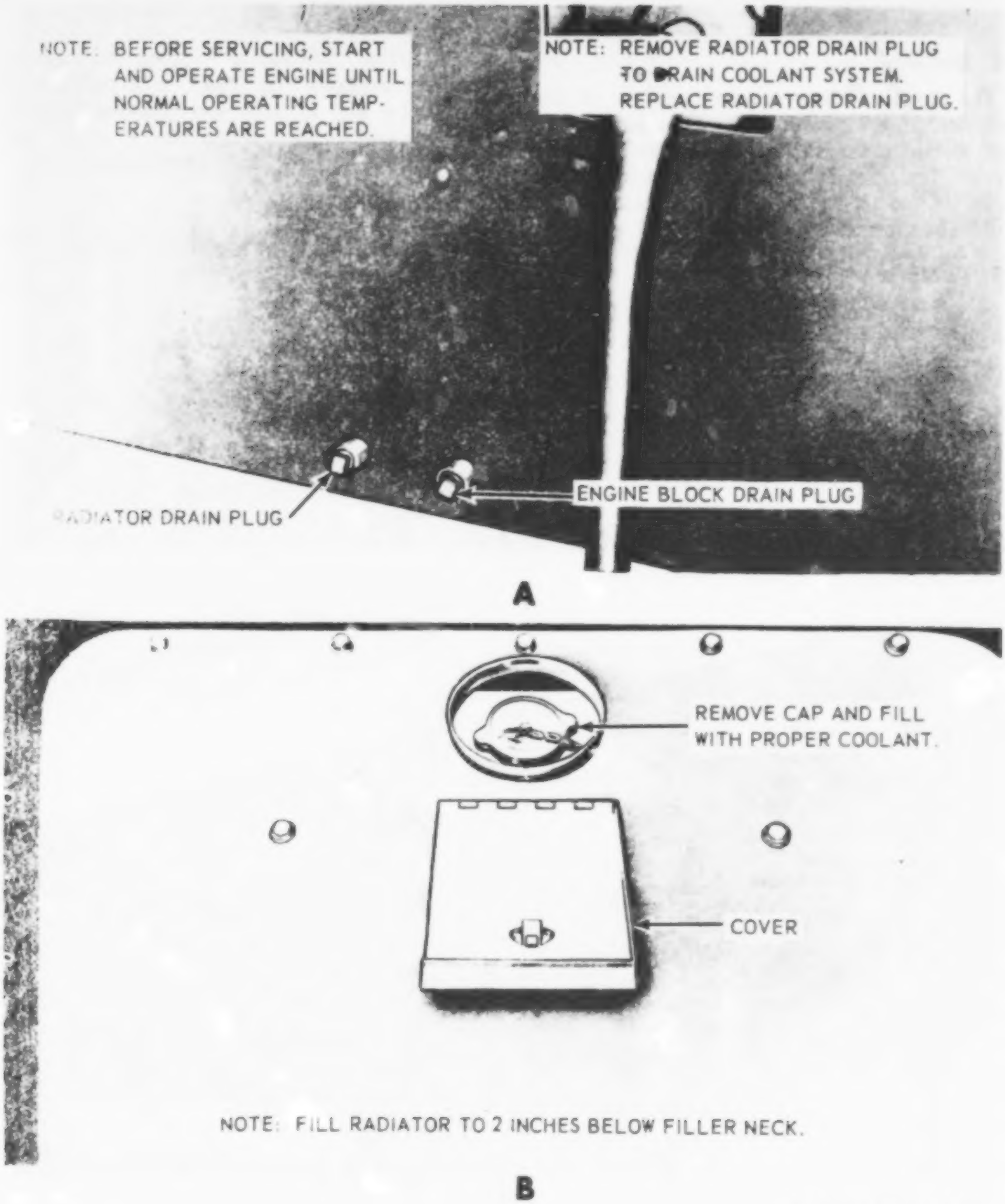
59. Radiator Service

a. Service the radiator as instructed on figure 26.

b. To flush the radiator, drain the coolant from the radiator (fig. 26A). Fill the system with water and an approved cleaning solvent. Run the engine 15 minutes, drain, flush, and refill with coolant to ½ inch above baffle.

60. Fan Belt Service

Ajust the fan belt as instructed on figure 27.


RADIATOR DRAIN PLUG
ENGINE BLOCK DRAIN PLUG
A
REMOVE CAP AND FILL WITH PROPER COOLANT.
COVER
B

NOTE: BEFORE SERVICING, START AND OPERATE ENGINE UNTIL NORMAL OPERATING TEMPERATURES ARE REACHED.

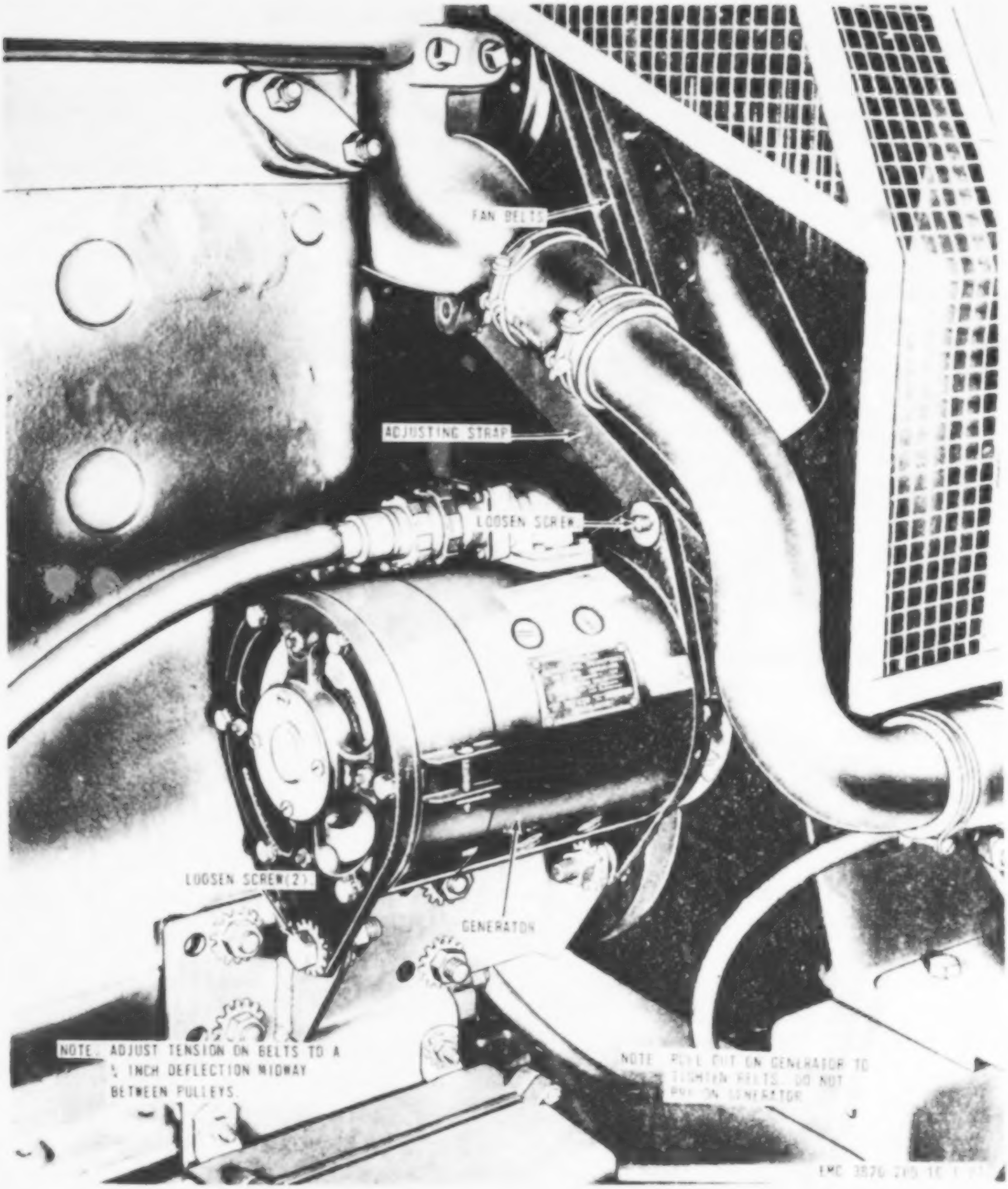
NOTE: REMOVE RADIATOR DRAIN PLUG TO DRAIN COOLANT SYSTEM. REPLACE RADIATOR DRAIN PLUG.

NOTE: FILL RADIATOR TO 2 INCHES BELOW FILLER NECK.

MSC 3820-205-10 2 26

A—Radiator and engine block drain.
B—Radiator fill cap.

Figure 26. Radiator, service.


FAN BELTS
ADJUSTING STRAP
LOOSEN SCREW
LOOSEN SCREW(2)
GENERATOR
EMC 3820 205 10 1 27

NOTE. ADJUST TENSION ON BELTS TO A ½ INCH DEFLECTION MIDWAY BETWEEN PULLEYS.

NOTE. PULL OUT ON GENERATOR TO TIGHTEN BELTS. DO NOT PRY ON GENERATOR.

Figure 27. Fan belt, adjustment.

Section VIII. ENGINE ELECTRICAL SYSTEM

61. General

The engine electrical system consists of the generator, generator regulator, four 12-volt batteries, and the safety cutout control assembly and components. The batteries are connected in series-parallel to provide 24 volts for the engine electrical system. The electrical system has a negative ground.

62. Battery Service

a. Service the batteries as instructed on figure 28.

Warning: **Do not allow an electric spark or open flame near storage batteries during or soon after charging. Hydrogen gas is generated during charging which can cause an explosion if ignited. Do not lay tools across battery terminals which could create a spark. Avoid spilling electrolyte on hanar ing.**

b. To inspect and adjust the battery clamp, proceed as follows:

(1) Loosen locknut (B, fig. 28) and place clamp handle up or at right angle to battery terminal.

(2) Remove clamps from battery terminals; inspect clamps for lose or corroded condition. Remove corrosion and coat battery terminals and clamps with grease.

(3) Install clamps on battery terminals. Tighten bushing nut to friction-fit between lug and battery terminal.

(4) Tighten locknut and push handle down until parallel with clamp.

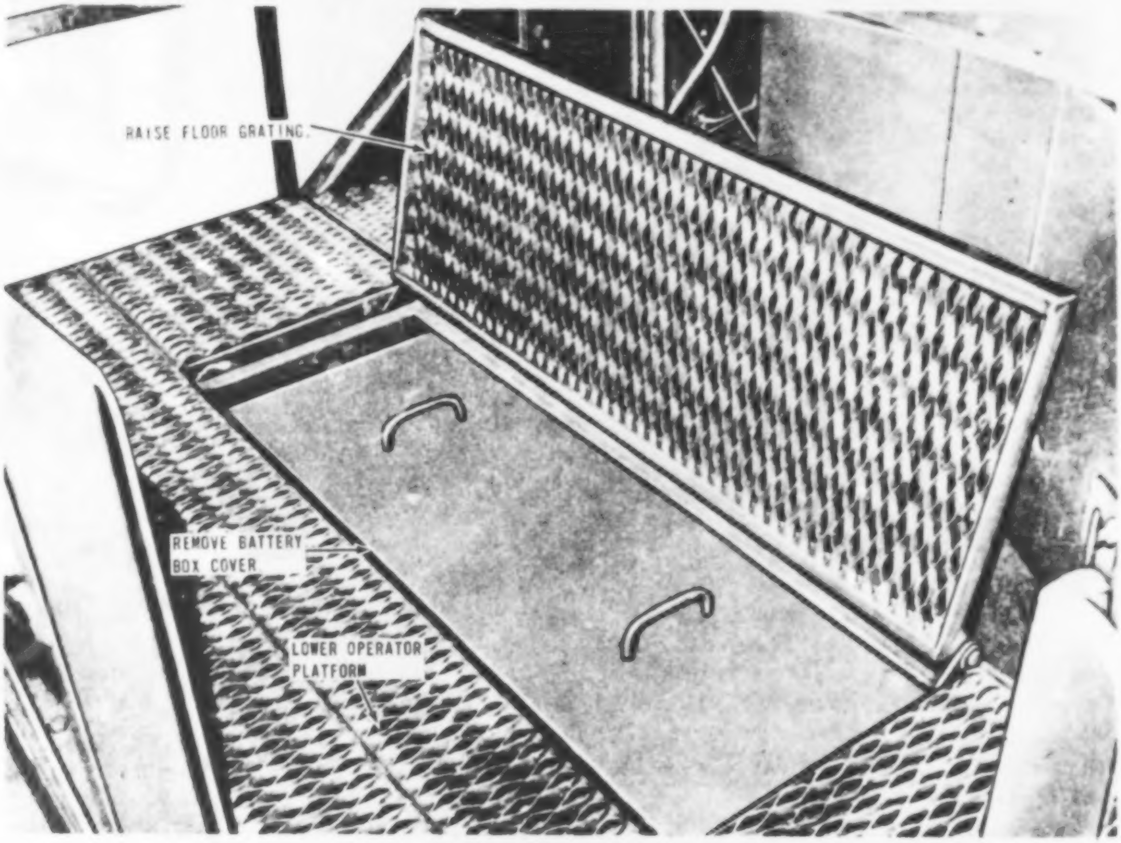


Figure 28. Battery service.

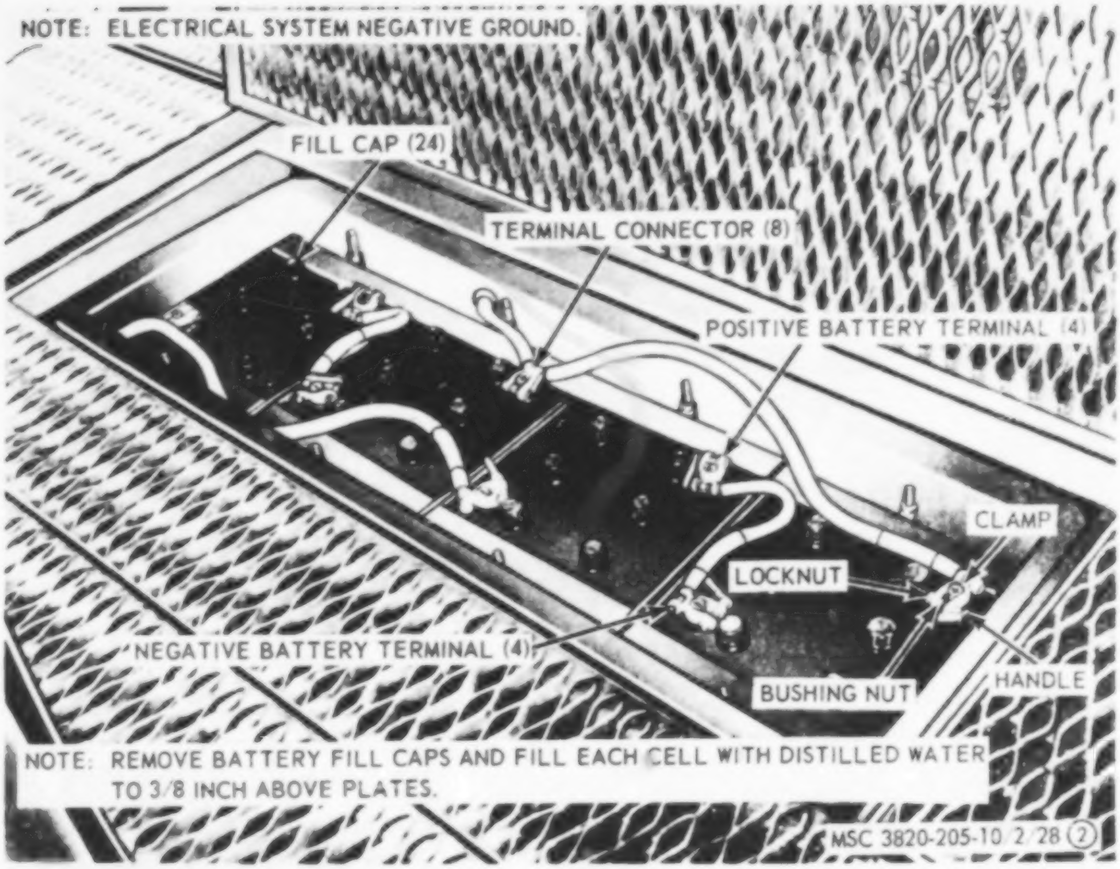

NOTE: ELECTRICAL SYSTEM NEGATIVE GROUND.
FILL CAP (24)
TERMINAL CONNECTOR (8)
POSITIVE BATTERY TERMINAL (4)
CLAMP
LOCKNUT
NEGATIVE BATTERY TERMINAL (4)
HANDLE
BUSHING NUT
NOTE: REMOVE BATTERY FILL CAPS AND FILL EACH CELL WITH DISTILLED WATER TO 3/8 INCH ABOVE PLATES.
MSC 3820-205-10/2/28 ②

Figure 28—Continued.

Section IX. AIR BRAKE SYSTEM

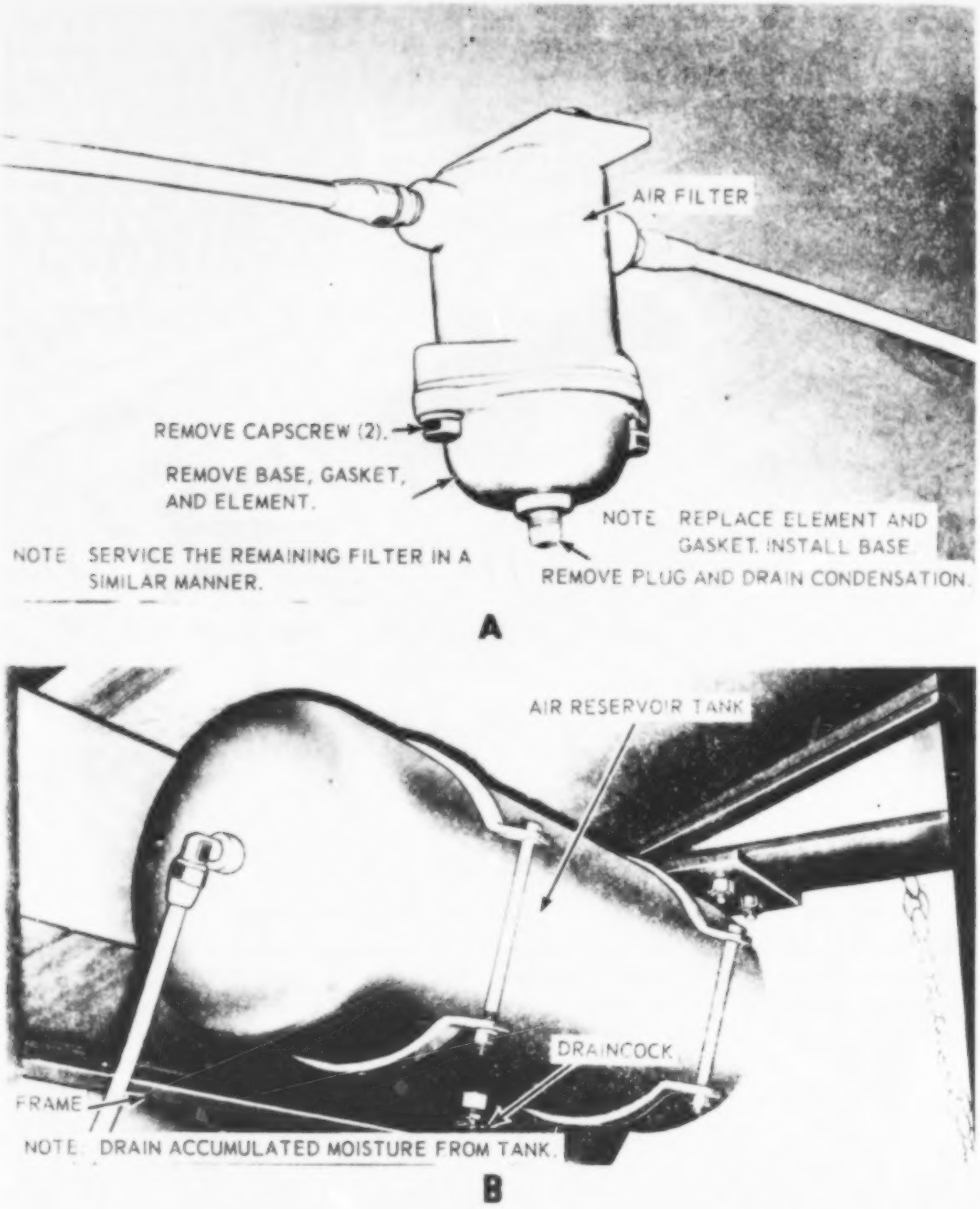
63. General

The air brake system has two filters to remove moisture and foreign matter from the system, and an air tank for emergency supply of air.

64. Air System Service

a. Service the air filters as instructed on A, figure 29.

b. Service the air reservoir as instructed on B, figure 29.


AIR FILTER
A
AIR RESERVOIR TANK
DRAINCOCK
FRAME
B

REMOVE CAPSCREW (2).

REMOVE BASE, GASKET, AND ELEMENT.

NOTE: SERVICE THE REMAINING FILTER IN A SIMILAR MANNER.

NOTE: REPLACE ELEMENT AND GASKET. INSTALL BASE.

REMOVE PLUG AND DRAIN CONDENSATION.

NOTE: DRAIN ACCUMULATED MOISTURE FROM TANK.

MSC 3820-205-10-2-29

A—Air filter service.
B—Air reservoir service.
Figure 29. Air system, service.

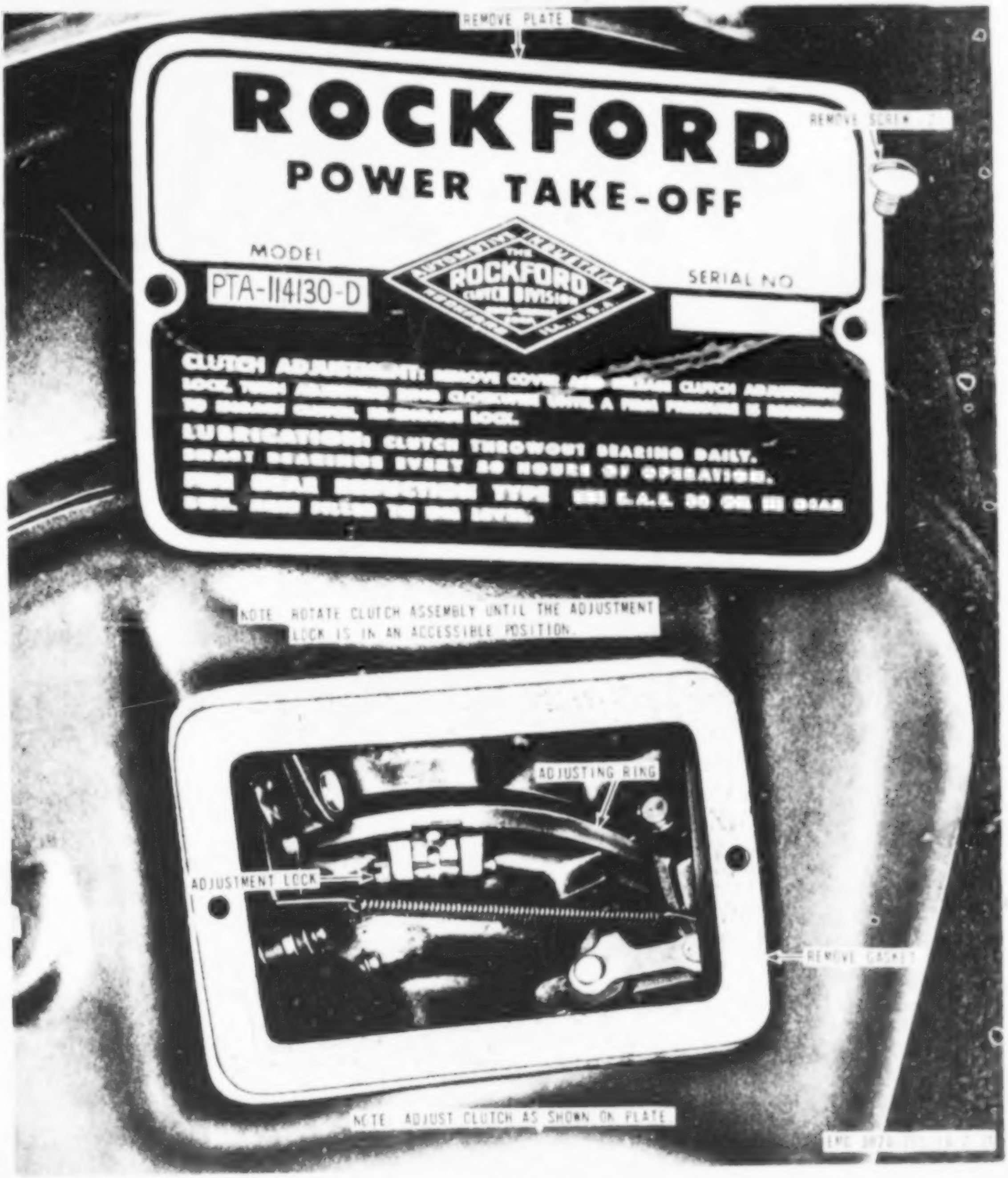
Section X. ENGINE CLUTCH ASSEMBLY

65. General

The engine clutch assembly engages and disengages the power from the diesel engine to the crusher jaw drive belts.

66. Engine Clutch Assembly Adjustment

Adjust the engine clutch assembly as instructed on figure 30.


REMOVE PLATE
ROCKFORD
POWER TAKE-OFF
REMOVE SCREW
MODEL
PTA-114130-D
THE ROCKFORD CLUTCH DIVISION
SERIAL NO
CLUTCH ADJUSTMENT: REMOVE COVER
LUBRICATION: CLUTCH THROWOUT BEARING DAILY.
ADJUSTING RING
ADJUSTMENT LOCK
REMOVE GASKET

NOTE. ROTATE CLUTCH ASSEMBLY UNTIL THE ADJUSTMENT LOCK IS IN AN ACCESSIBLE POSITION.

NOTE. ADJUST CLUTCH AS SHOWN ON PLATE.

Figure 30. Engine clutch, adjustment.

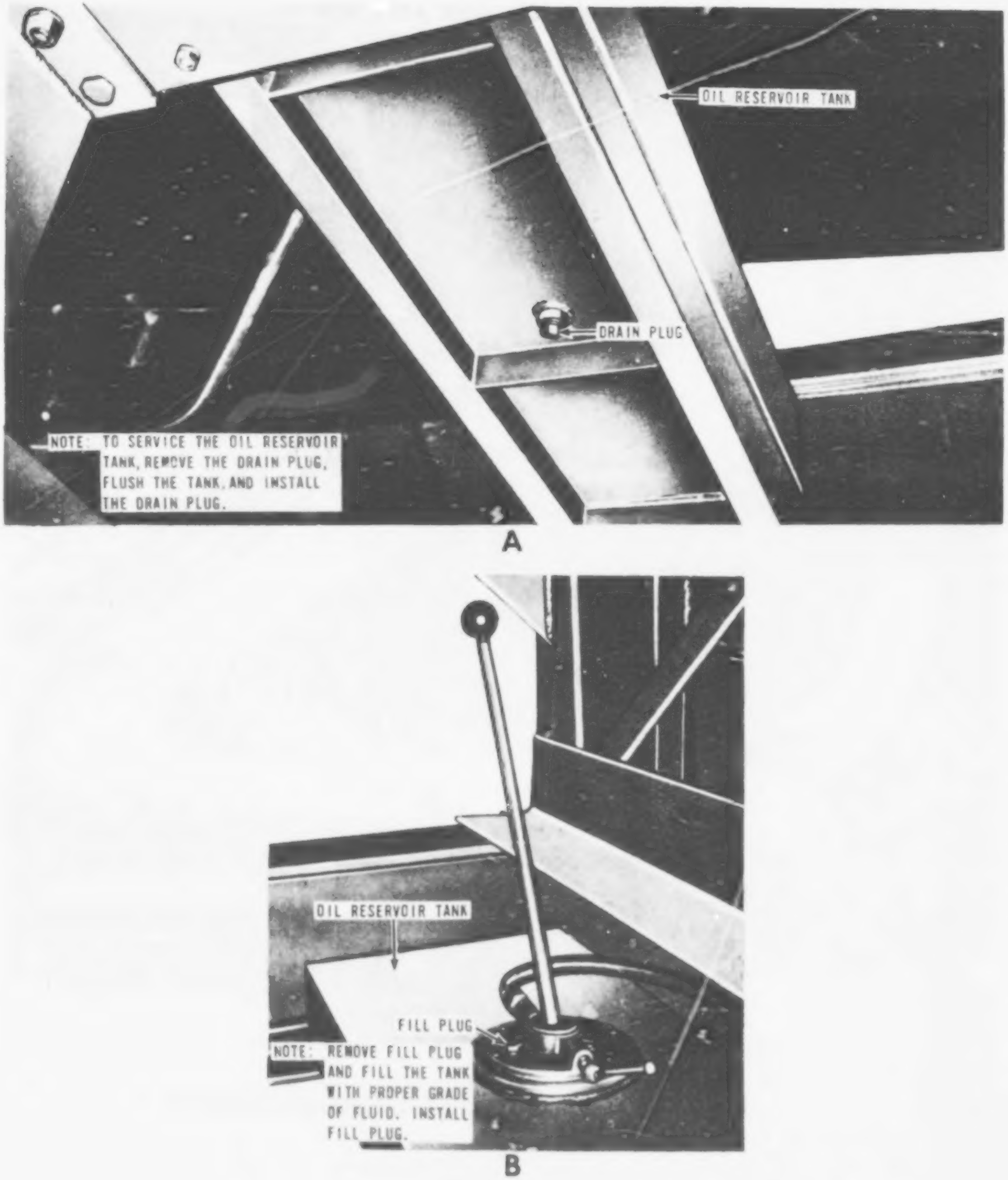
Section XI. CRUSHER HYDRAULIC SYSTEM

67. General

The hydraulic system consists of a hydraulic tank and a hand pump located at the top of the tank. The hydraulic pump is used to actuate the hydraulic hoist which raises the pan feeder assembly into working position.

68. Hydraulic Tank Service

Service the hydraulic tank as instructed on figure 31. Refer to LO 5–3820–205–20/2 for correct grade and type of hydraulic fluid.


OIL RESERVOIR TANK
DRAIN PLUG
NOTE: TO SERVICE THE OIL RESERVOIR TANK, REMOVE THE DRAIN PLUG, FLUSH THE TANK, AND INSTALL THE DRAIN PLUG.
A
OIL RESERVOIR TANK
FILL PLUG
NOTE: REMOVE FILL PLUG AND FILL THE TANK WITH PROPER GRADE OF FLUID. INSTALL FILL PLUG.
B

EMC 3820-205-10/2/32

A—Drain plug.
B—Fill plug.

Figure 31. Hydraulic tank, service.

Section XII. CRUSHER ASSEMBLY

69. General

The crusher assembly consists of a movable and a stationary jaw for crushing stone. A ratchet assembly and tension spring are located at the rear of the movable jaw for adjustment to produce the size stone which is required.

70. Crusher Jaw Adjustment

Adjust the crusher jaw as instructed on figure 32.

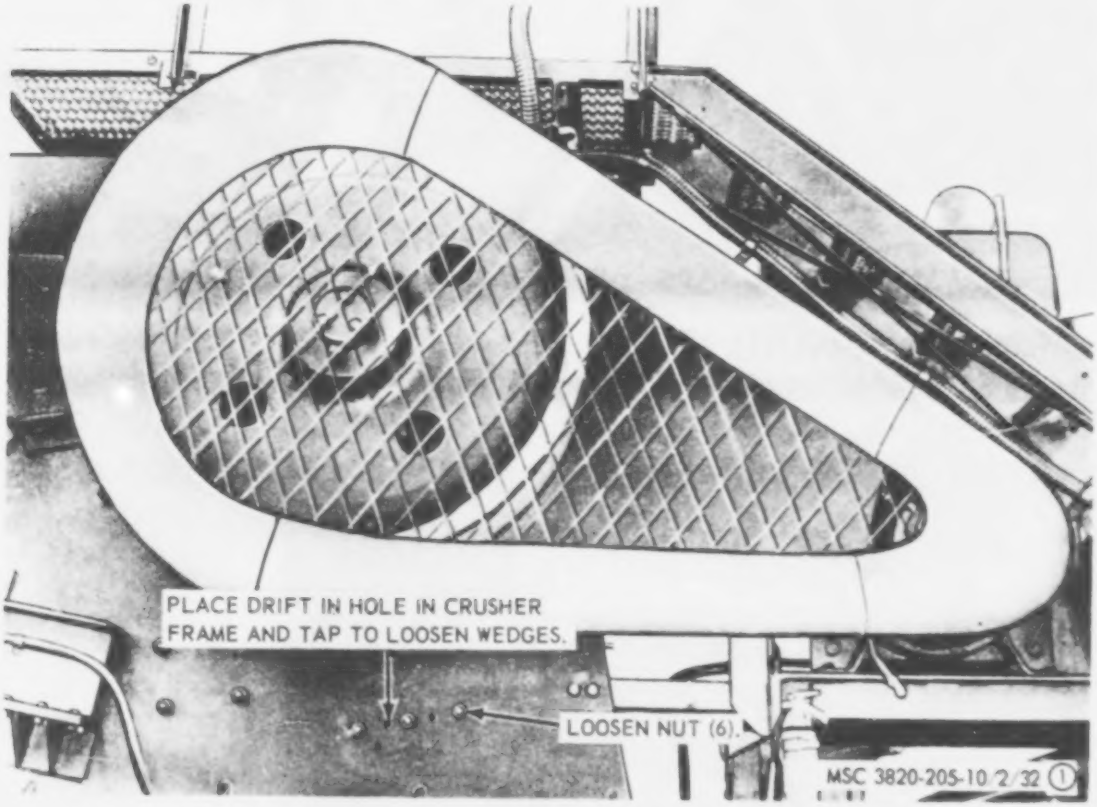
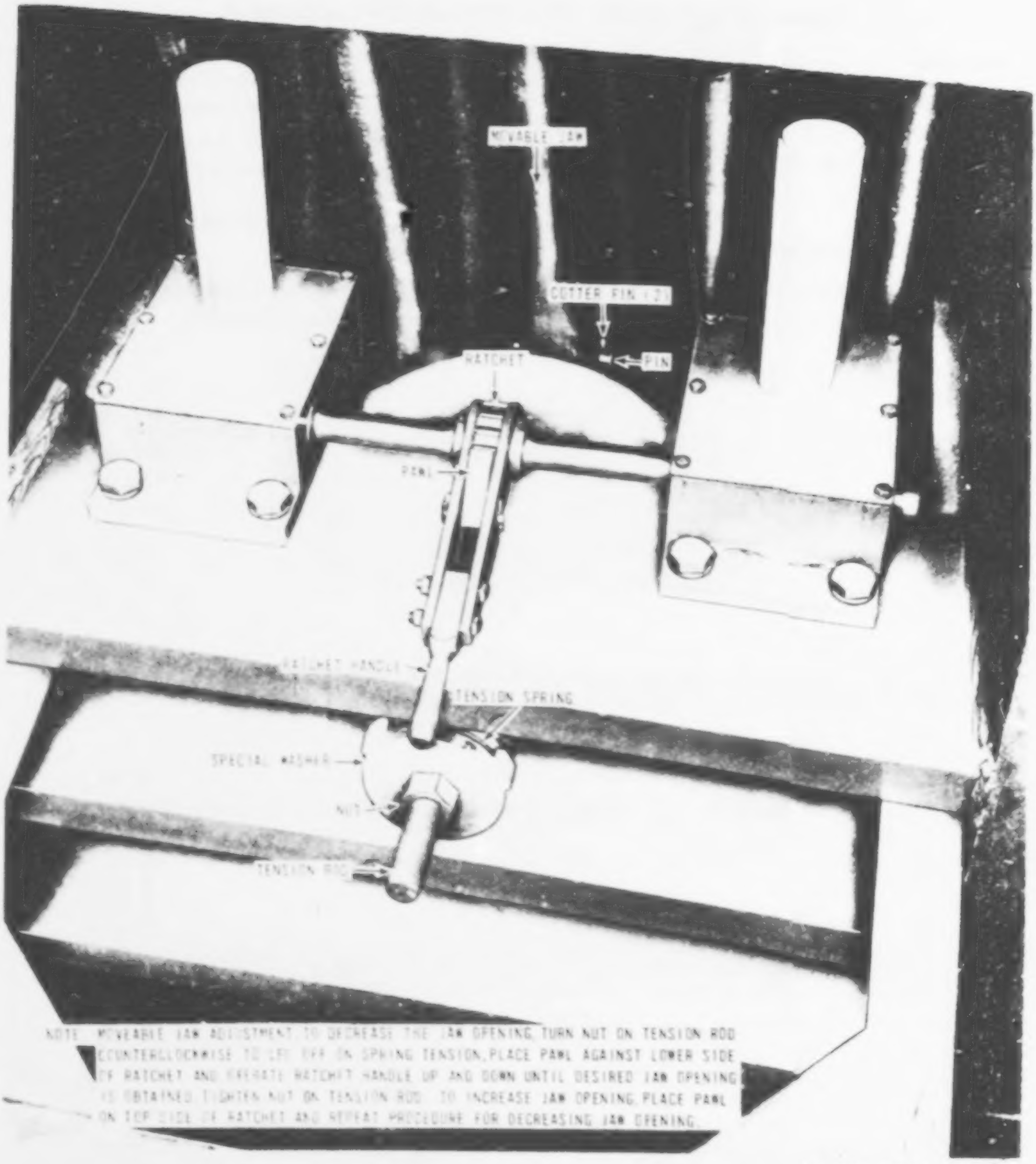

PLACE DRIFT IN HOLE IN CRUSHER FRAME AND TAP TO LOOSEN WEDGES.
LOOSEN NUT (6).
MSC 3820-205-10/2/32 ①

Figure 32. Movable jaw, adjustment.


MOVABLE JAW
COTTER PIN (2)
PIN
RATCHET
PAWL
RATCHET HANDLE
TENSION SPRING
SPECIAL WASHER
NUT
TENSION ROD

NOTE: MOVEABLE JAW ADJUSTMENT: TO DECREASE THE JAW OPENING, TURN NUT ON TENSION ROD COUNTERCLOCKWISE TO LET OFF ON SPRING TENSION, PLACE PAWL AGAINST LOWER SIDE OF RATCHET AND OPERATE RATCHET HANDLE UP AND DOWN UNTIL DESIRED JAW OPENING IS OBTAINED. TIGHTEN NUT ON TENSION ROD. TO INCREASE JAW OPENING, PLACE PAWL ON TOP SIDE OF RATCHET AND REPEAT PROCEDURE FOR DECREASING JAW OPENING.

EPC 3820-215-10/2-33 (2)

Figure 32—Continued.

Section XIII. SCALPER VIBRATING SCREEN ASSEMBLY

71. General

The scraper vibrating screen assembly is driven by an electric motor. Power is transmitted to the vibrating screen from the electric motor by two V-belts.

72. Scalper Vibrating Screen

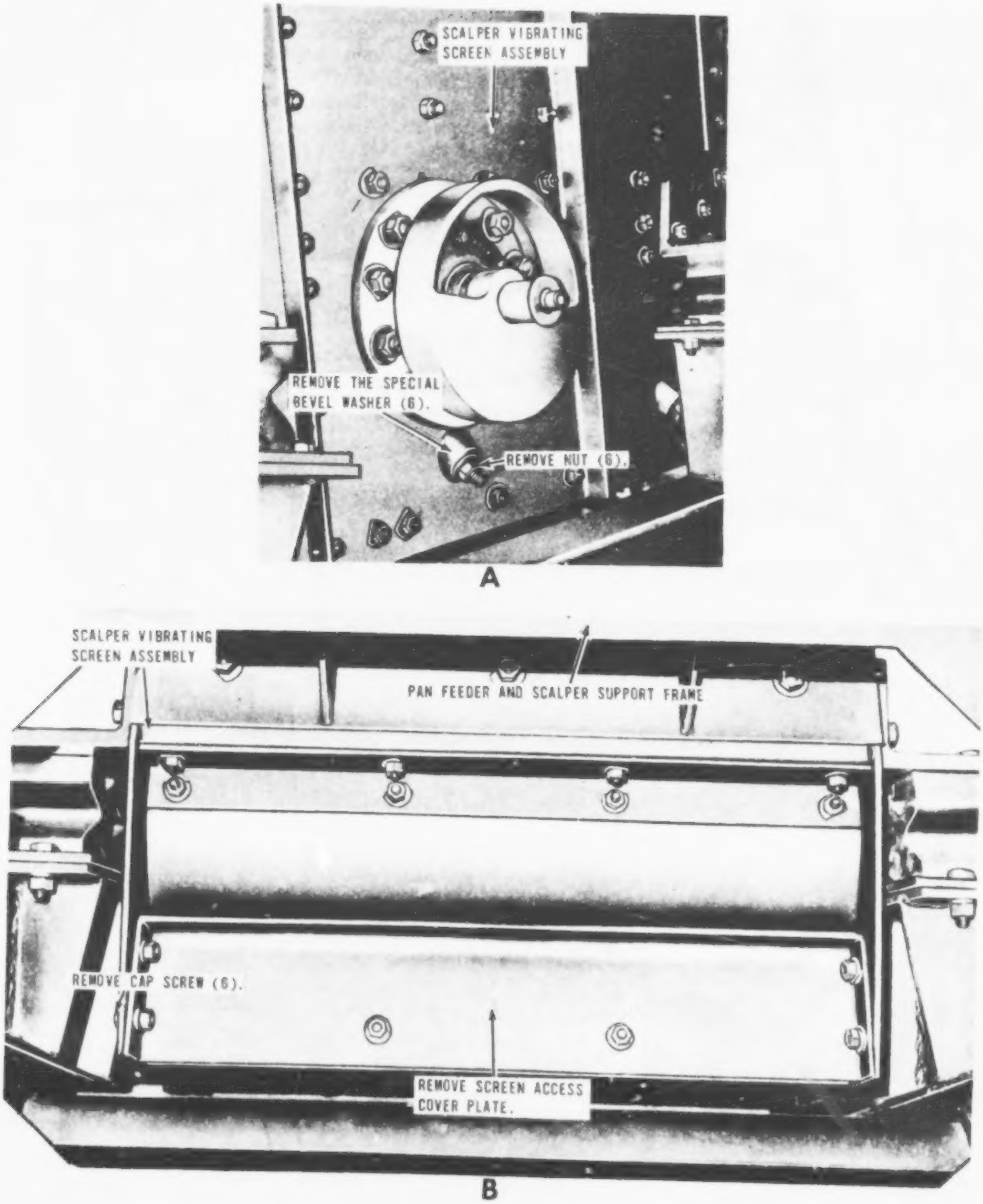
a. Removal. Remove the scalper vibrating screen as instructed on figure 33.

b. Cleaning, Inspection, and Repair. Clean and inspect the scalper vibrating screen for any damage and replace as necessary.

c. Installation. Install the scalper vibrating screen in reverse of instructions on figure 33.

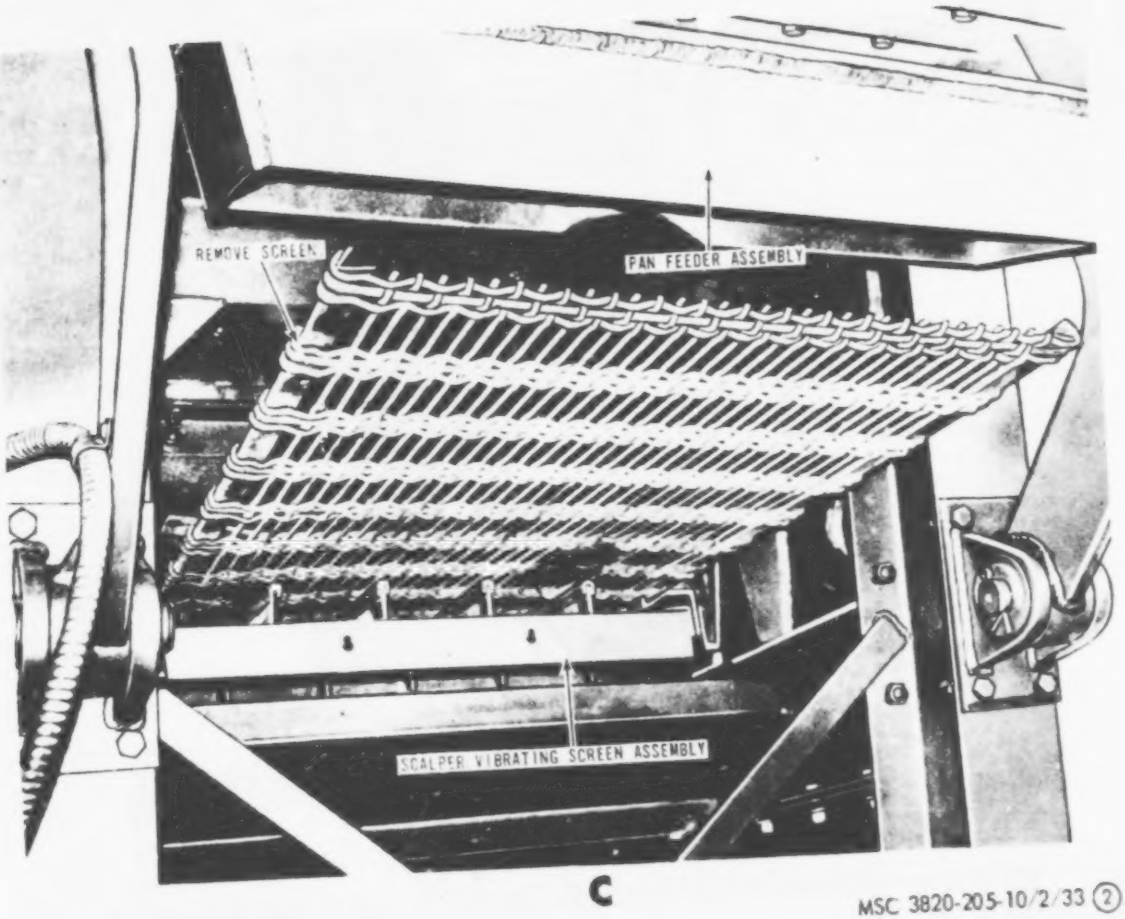
73. Scalper Vibrating Screen Drive Belts Adjustment

Adjust the scalper vibrating screen drive belts as instructed on figure 34.


SCALPER VIBRATING SCREEN ASSEMBLY
REMOVE THE SPECIAL BEVEL WASHER (6).
REMOVE NUT (6).
A
SCALPER VIBRATING SCREEN ASSEMBLY
PAN FEEDER AND SCALPER SUPPORT FRAME
REMOVE CAP SCREW (6).
REMOVE SCREEN ACCESS COVER PLATE.
B
EMC 3820-205-10/2/34 ①

A—Screen retaining bolts installed view.
B—Screen access cover plate installed view.

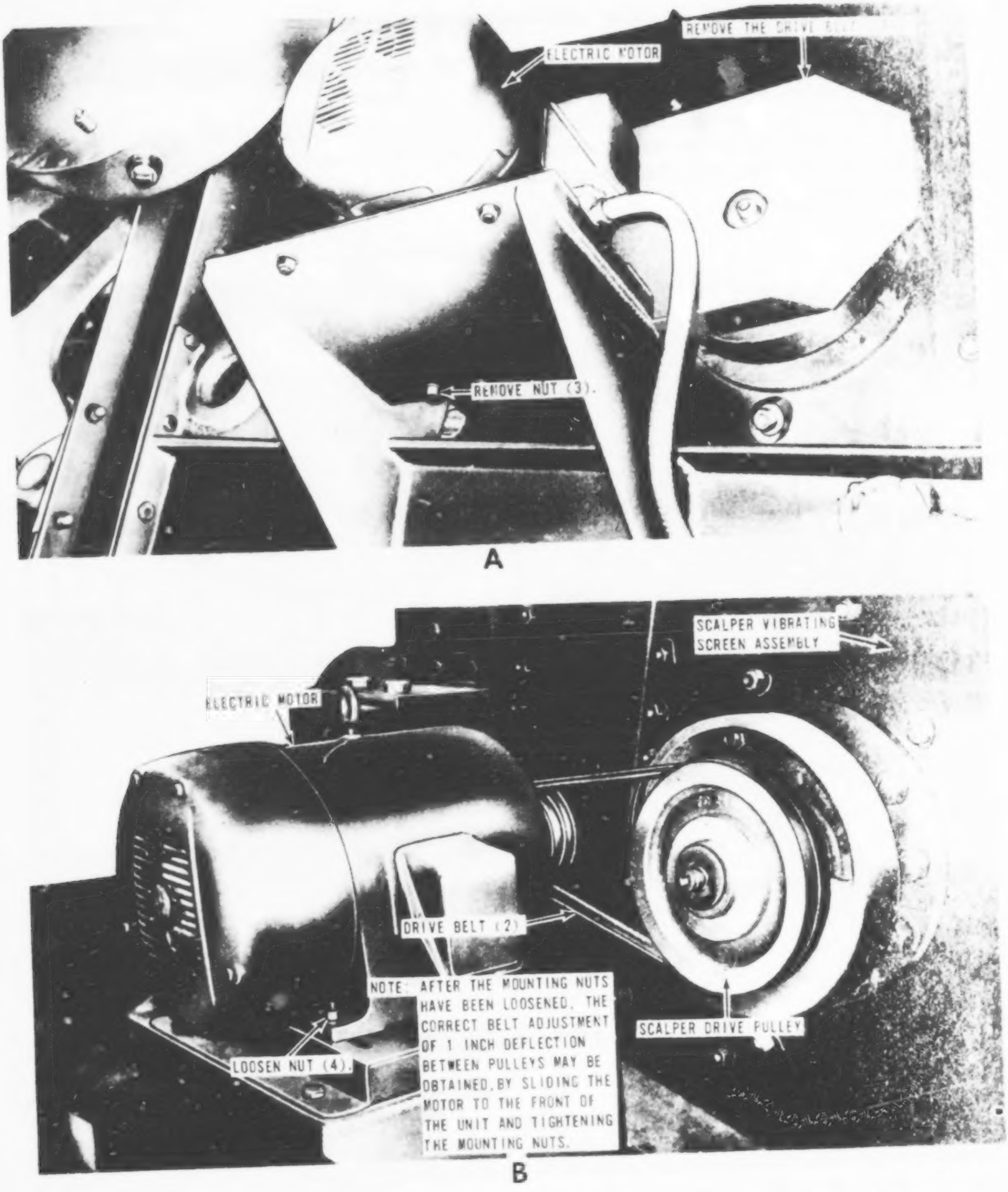
Figure 33. Scalper vibrating screen, removal and installation.


REMOVE SCREEN
PAN FEEDER ASSEMBLY
SCALPER VIBRATING SCREEN ASSEMBLY
C

MSC 3820-205-10/2/33 ②

C—Screen partially removed.

Figure 33—Continued.


ELECTRIC MOTOR
REMOVE THE DRIVE BELT
REMOVE NUT (3).
A
SCALPER VIBRATING SCREEN ASSEMBLY
ELECTRIC MOTOR
DRIVE BELT (2)
NOTE: AFTER THE MOUNTING NUTS HAVE BEEN LOOSENED, THE CORRECT BELT ADJUSTMENT OF 1 INCH DEFLECTION BETWEEN PULLEYS MAY BE OBTAINED, BY SLIDING THE MOTOR TO THE FRONT OF THE UNIT AND TIGHTENING THE MOUNTING NUTS.
SCALPER DRIVE PULLEY
LOOSEN NUT (4).
B

MSC 3820 205

A—Scalper vibrating screen belt guard installed.
B—Scalper vibrating screen belt guard removed.
Figure 34. Scalper vibrating screen drive belt, adjustment.

Section XIV. PAN FEEDER ASSEMBLY

74. General

The pan feeder assembly is driven by a 10-horsepower electric motor. Power is transmitted to the pan feeder conveyor from ② V-belts through the gear reduction to the drive shaft and sprockets.

75. Pan Feeder Assembly Drive Belts Adjustment

Adjust the pan feeder drive belts as instructed on figure 35.

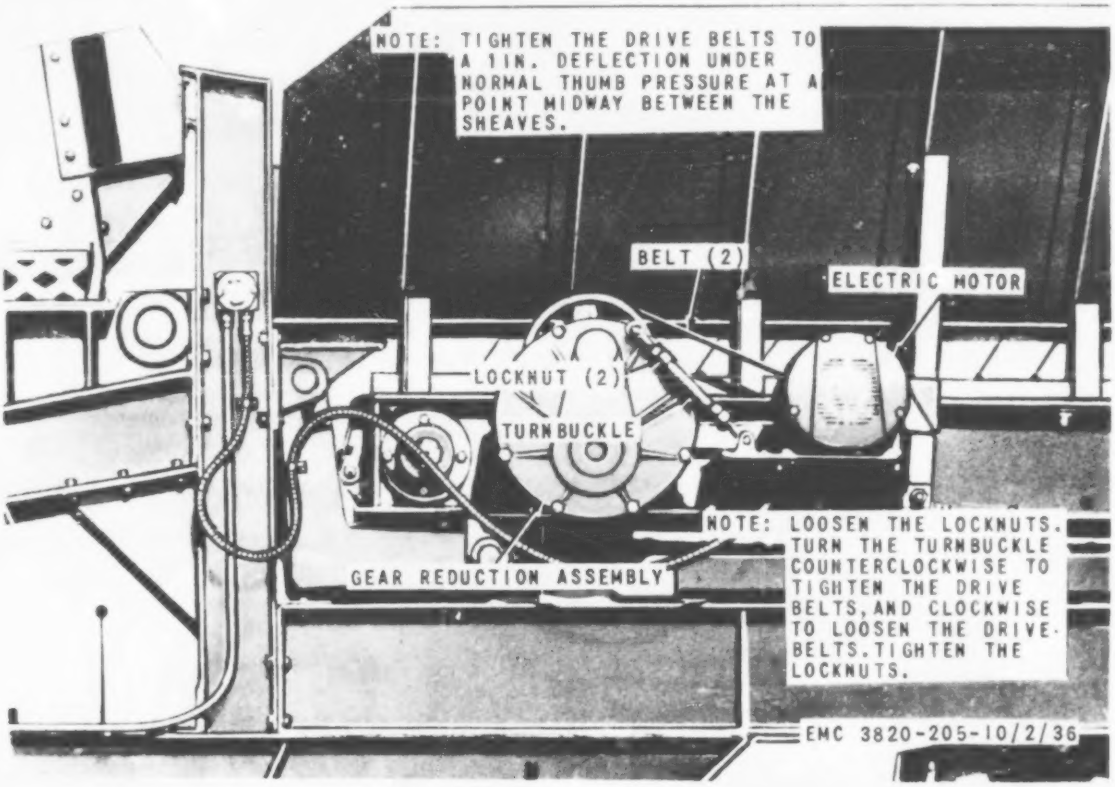

NOTE: TIGHTEN THE DRIVE BELTS TO A 1 IN. DEFLECTION UNDER NORMAL THUMB PRESSURE AT A POINT MIDWAY BETWEEN THE SHEAVES.
BELT (2)
ELECTRIC MOTOR
LOCKNUT (2)
TURNBUCKLE
NOTE: LOOSEN THE LOCKNUTS. TURN THE TURNBUCKLE COUNTERCLOCKWISE TO TIGHTEN THE DRIVE BELTS, AND CLOCKWISE TO LOOSEN THE DRIVE BELTS. TIGHTEN THE LOCKNUTS.
GEAR REDUCTION ASSEMBLY
EMC 3820-205-10/2/36

Figure 35. Pan feeder drive belt, adjustment.

Section XV. MAIN CONVEYOR ASSEMBLY

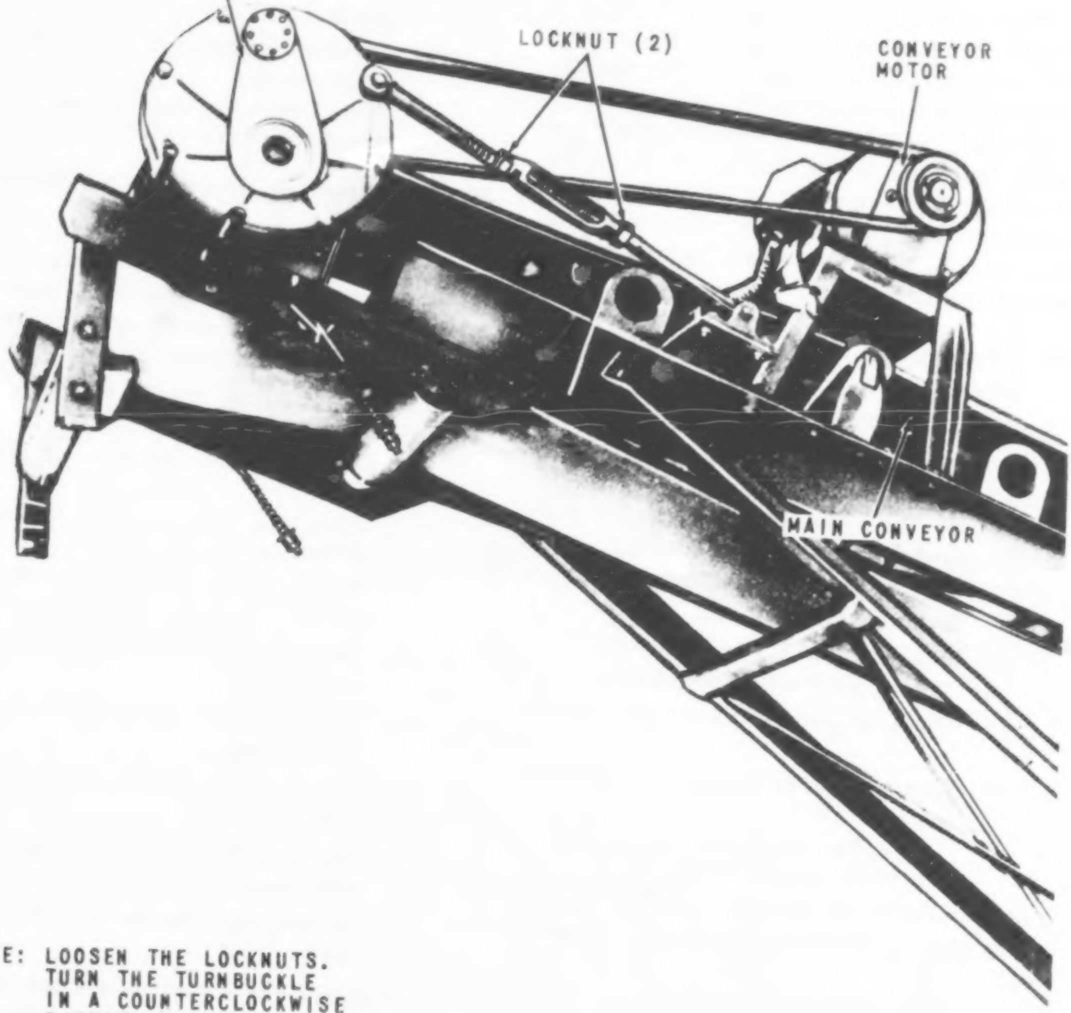
76. General

The main conveyor assembly is driven by a 10-horsepower electric motor. Power is transmitted to the main conveyor from the ② V-belts through the gear reduction to the conveyor drive head roller.

77. Main Conveyor Assembly Drive Belts Adjustment

Adjust the main conveyor drive belts as instructed on figure 36.

NOTE: TIGHTEN THE DRIVE BELT TO 1½ IN. DEFLECTION UNDER NORMAL THUMB PRESSURE AT A POINT MIDWAY BETWEEN THE SHEAVES.


GEAR REDUCTION ASSEMBLY
LOCKNUT (2)
CONVEYOR MOTOR
MAIN CONVEYOR

NOTE: LOOSEN THE LOCKNUTS. TURN THE TURNBUCKLE IN A COUNTERCLOCKWISE DIRECTION TO TIGHTEN THE DRIVE BELTS. TIGHTEN THE LOCKNUTS.

EMC 3820-205-10/2/37

Figure 36. Main conveyor drive belt, adjustment.

CHAPTER 4

DEMOLITION OF JAW CRUSHER TO PREVENT ENEMY USE

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78. General

When capture or abandonment of the jaw crusher to an enemy is imminent, the responsible unit commander must make the decision either to destroy the equipment or to render it inoperative. Based on this decision, orders are issued which cover the desired extent of destruction. Whatever method of demolition is employed, it is essential to destroy the same vital parts of all jaw crushers and all corresponding repair parts.

79. Demolition to Render Equipment Inoperative

a. Demolition by Mechanical Means. Use sledge hammers, crowbars, picks, axes, or other heavy tools that may be available, together with the tools normally included with the jaw crusher, to destroy the following:

(1) Fuel pump, manifold, radiators, fuel filters, and instruments.

(2) Discharge and feeder conveyors.

(3) Motors, drive belts, and pulleys.

(4) Conveyor rollers, tires, and control box.

(5) Lights, electrical panels, and electrical cables.

Note. The above steps are minimum requirements for this method.

b. Demolition by Misuse. Perform the following steps to render the jaw crusher inoperative.

(1) Drain the engine crankcase.

(2) Drain all gear housings.

(3) Drain hydraulic tank.

(4) Throw sand, mud, and other foreign substances into the oil filter openings and engine crankcase.

(5) Drain the cooling system.

(6) Throw dirt or sand into the radiator and fuel tank.

(7) Operate the engine at full speed until failure occurs.

Note. The above steps are minimum requirements for this method.

80. Demolition by Explosives or Weapons Fire

a. Explosives. Place as many of the charges shown on figure 37 as the situation permits and detonate them simultaneously with a detonating cord and suitable detonator.

(1) One ½-pound charge between injection pump and engine block.

(2) Two ½-pound charges on engine clutch.

Note. The above charges are the minimum requirements for this method.

(3) One ½-pound charge on conveyor motor.

(4) Two ½-pound charges on main electrical panel.

(5) One ½-pound charge on vibrating screen motor.

(6) Two ½-pound charges on axle housings.

(7) One ½-pound charge on feeder conveyor motor.

(8) Six ½-pound charges between crusher jaws.

b. Weapons Fire. Fire on the jaw crusher with the heaviest suitable weapons available.

81. Other Demolition Methods

a. Scattering and Concealment. Remove all easily accessible parts, such as fuel pump, fuel

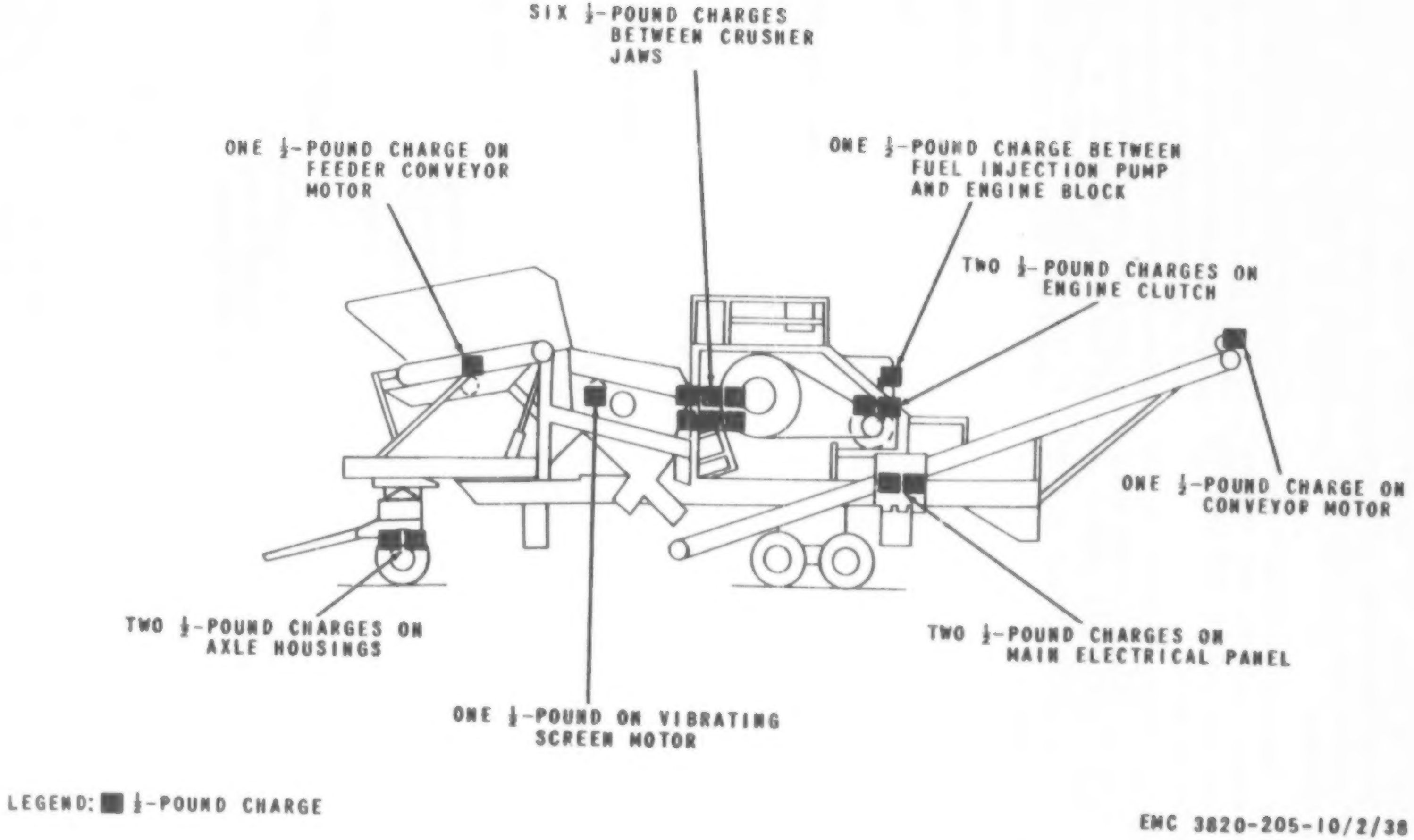
SIX ½-POUND CHARGES BETWEEN CRUSHER JAWS
ONE ½-POUND CHARGE ON FEEDER CONVEYOR MOTOR
ONE ½-POUND CHARGE BETWEEN FUEL INJECTION PUMP AND ENGINE BLOCK
TWO ½-POUND CHARGES ON ENGINE CLUTCH
ONE ½-POUND CHARGE ON CONVEYOR MOTOR
TWO ½-POUND CHARGES ON AXLE HOUSINGS
TWO ½-POUND CHARGES ON MAIN ELECTRICAL PANEL
ONE ½-POUND ON VIBRATING SCREEN MOTOR
LEGEND: ■ ½-POUND CHARGE
EMC 3820-205-10/2/38

Figure 37. Placement of demolition charges.

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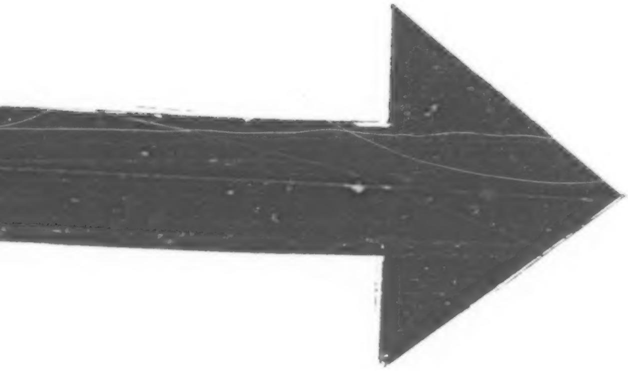

filters, oil filter, air cleaner, and batteries. Scatter them through dense foliage, bury them in the ground, or throw them in a lake, stream, or other body of water.

b. Burning. Pack rags, clothing, or canvas around the engine, conveyors, and electrical panels. Saturate this packing with gasoline, oil, or diesel fuel and ignite.

c. Submersion. Totally sumerge the jaw crusher in a body of water, if possible, to provide some water damage and concealment. Salt water will do greater damage to metal parts than fresh water.

82. Training

All operators should receive thorough training in the destruction of the jaw crusher. Refer to FM 5-25. Simulated destruction, using all of the methods listed above, should be included in the operator training program. It must be emphasized in training, that demolition operations are usually necessitated by critical situations when time available for carrying out destruction is limited. For this reason, it is necessary that operators be thoroughly familiar with all methods of destruction of equipment, and be able to carry out demolition instructions without reference to this or any other manual.

APPENDIX I

REFERENCES

1. Dictionaries of Terms and Abbreviations

AR 320–5	Dictionary of United States Army Terms.
AR 320–50	Authorized Abbreviations and Brevity Codes.

2. Fire Protection

TM 5–687	Repairs and Utilities: Fire Protection Equipment and Applicances; Inspections, Operations, and Preventive Maintenance.
TM 9–1799	Ordnance Maintenance: Fire Extinguishers

3. Lubrication

LO 5–3820–205–20/2	Lubrication Order.

4. Painting

TM 9–213	Painting Instructions for Field Use.

5. Preventive Maintenance

AR 750–5	Maintenance Responsibilities and Shop Operation.
TM 9–1870–1	Care and Maintenance of Pneumatic Tires.
TM 38–750	The Army Equipment Records System and Precedures.
TM 9–6140–200–15	Storage Batteries, Lead-Acid Type.

6. Publication Indexes

DA Pam 310–4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 4, 6, 7, 8, and 9), Supply Bulletins, Lubrication Orders, and Modification Work Orders.

7. Training Aids

FM 5–25	Explosives and Demolition.
FM 21–5	Military Training.
FM 21–6	Techniques of Military Instruction.
FM 21–30	Military Symbols.

8. Supply Publications

C9100–SL	Petroleum, Petroleum-Base Products, and Related Material.
SB 38–5–3	List of Standard Lubricants, Hydraulic Fluids, Liquid Fuels, and Preservative Material Used by the Army.

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APPENDIX II

BASIC ISSUE ITEMS LIST AND MAINTENANCE AND OPERATING SUPPLIES

Section I. INTRODUCTION

1. General

Section II lists the accessories, tools, and publications required in 1st echelon maintenance and operation, initially issued with, or authorized for the Jaw Crusher. Section III lists the maintenance and operating supplies required for initial operation.

2. Explanation of Columns Contained in Section II

a. Source Codes. The information provided in each column is as follows:

(1) *Materiel.* This column lists the basic material code number of the supply service assigned responsibility for the part. Blank spaces denote supply responsibility of the preparing agency. Other basic materiel code numbers are:

3—Chemical Materiel
9—Ordnance Materiel
10—Quartermaster Materiel
12—Adjutant General

(2) *Source.* The selection status and source of supply for each part are indicated by one of the following code symbols:

(*a*) P—applied to high-mortality repair parts which are stocked in or supplied from the supply service depot system, and authorized for use at indicated maintenance echelons.

(*b*) Pl—applied to repair parts which are low-mortality parts, stocked in or supplied from supply service depots, and authorized for installation at indicated maintenance echelons.

(3) *Maintenance.* The lowest maintenance echelon authorized to use, stock, install, or manufacture the part is indicated by the following code symbol:

O—Organizational Maintenance (1st and 2d echelon)

b. Federal Stock Numbers. The Federal stock number will be shown in this column and will be used for requisitioning purposes.

c. Description.

(1) The item name and a brief description of the part are shown.

(2) A five-digit Federal Supply Code for manufacturers and/or other supply services is shown in parentheses followed by the manufacturer's part number. This number will be used for requisitioning purposes when no Federal stock number is indicated in the Federal stock number column.

Example: (08645) 86453

d. Unit of Issue. If no abbreviation is shown in this column, the unit of issue is "each".

e. Quantity Authorized. This column lists the quantities of repair parts, accessories, tools, or publications authorized for issue to the equipment operator or crew as required.

f. Quantity Issued with Equipment. This column lists the quantities of repair parts, accessories, tools, or publications that are initially issued with each item of equipment. Those indicated by an asterisk are to be requisitioned through normal supply channels as required.

g. Illustration. This column is subdivided into two columns which provide the following information:

(1) *Figure number.* Provides the identifying number of the illustration.

(2) *Item Number*. Provides the referenced number for the parts shown in the illustration.

3. Federal Supply Code for Manufacturers

14351..Continental Motors Corp.
92858..Hannay, Clifford B & Son, Inc.
00000..Ordnance Corps
18990..Eagle Crusher Co.
63477..Wagner Electric Corp.
90129..Joy Manufacturer Co. Electric Products
55719..Snap-on Tool Corp. Div.

4. Explanation of Columns Contained in Section III

a. Item. This column contains numerical sequenced item numbers, assigned to each component application, to facilitate reference.

b. Component Application. This column identifies the component application of each maintenance or operation supply item.

c. Source of Supply. This column lists the basic materiel code number of the supply service assigned responsibility for the item. Blank spaces denote supply responsibility of the preparing agency. Other basic materiel code numbers are:

9—Ordnance Materiel
10—Quartermaster Materiel

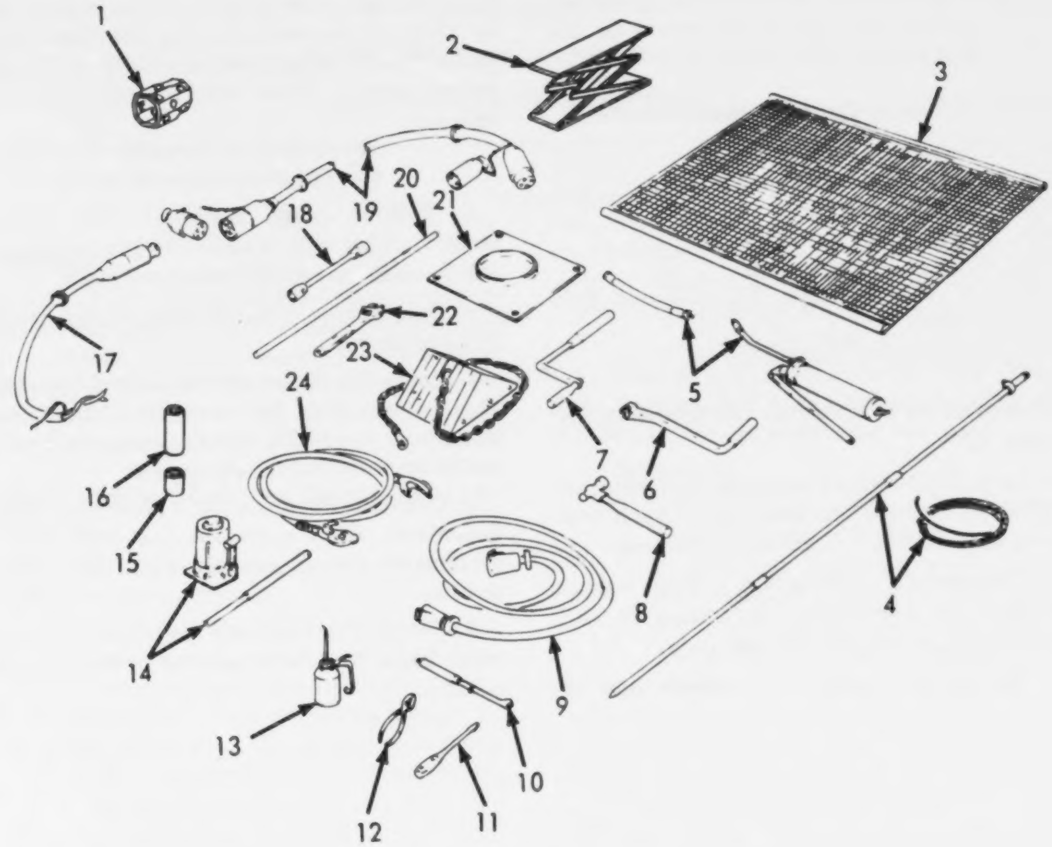
d. Federal Stock Number. The Federal Stock Number will be shown in this column and will be used for requisitioning purposes.

e. Description. The item and a brief description are shown.

f. Quantity Required for Initial Operation. This column lists the quantity of each maintenance or operation supply item required for initial operation of the equipment.

g. Quantity Required for 8 Hours Operation. Quantities listed represent the estimated requirements for an average eight hours of operation.

h. Notes. This column contains informative notes keyed to data appearing in the preceding column.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MSC 3820-205-10/2/38

1 Wheel bearing wrench
2 Trestle (sissors jack)
3 Wire screen
4 Ground rod assembly
5 Hand grease gun
6 Starting handcrank
7 Cable reel handcrank
8 Hand hammer
9 Wiring harness
10 Tire pressure gage
11 Screwdriver
12 Slip joint pliers
13 Hand oiler
14 Hydraulic hand jack
15 Power impact socket
16 Deep style socket
17 Power cable
18 Wheel stud nut wrench
19 Power cable
20 Socket wrench extension
21 Jack pad
22 Open end adjustable wrench
23 Chock assembly block
24 Service hose

Figure 38. Basic issue items.

Section II. BASIC ISSUE ITEMS LIST

Source codes				Federal stock No.	Description	Unit of issue	Expendability	Quantity authorized	Quantity issued with equipment	Illustration	
Materiel	Source	Maintenance	Recoverability							Fig	Item
					GROUP 31—BASIC ISSUE ITEMS MANUFACTURER INSTALLED						
					3100—*BASIC ISSUE ITEMS, MANUFACTURER OR DEPOT INSTALLED*						
9	P	O	-----	6140-057-2554	BATTERY, STORAGE: 12 v, 6 cell (Repair Parts Manual Group 0612)	----	----	4	4		
9	P	O	-----	--------------	BLOCK CHOCK ASSEMBLY w/ chain (00000) 8343584 (Repair Parts Manual Group 3100).	----	----	4	4	38	23
	P	O	-----	--------------	CABLE, POWER: pigtail (90129) X8617-24 (Repair Parts Manual Group 2202).	----	----	1	1	38	17
	P	O	-----	--------------	CABLE, POWER: 100 feet long (90129) X8617-25 (Repair Parts Manual Group 2202).	----	----	2	2	38	19
10	P1	O	-----	7520-559-9618	CASE: operation and maintenance publications, cotton duck, water repellent, and mildew resistant, MIL-B-117-43-B.	----	----	1	1		
	P	O	-----	--------------	CRANK, HAND: cable reel (92858) H-1061A-32 (Repair Parts Manual Group 1808).	----	----	1	1	38	7
	P	O	-----	--------------	CRANK, HAND: starting (14351) 31R02020 (Repair Parts Manual Group 0107).	----	----	1	1	38	6
12	-----	-----	-----	--------------	DEPARTMENT OF THE ARMY LUBRICATION ORDER LO 5-3820-205-20/2.	----	----	1	1		
12	-----	-----	-----	--------------	DEPARTMENT OF THE ARMY OPERATOR'S MANUAL TM 5-3820-205-10/2.	----	----	2	3		
12	-----	-----	-----	--------------	DEPARTMENT OF THE ARMY ORGANIZATIONAL MAINTENANCE MANUAL TM 5-3820-205-20/2.	----	----	2	2		
12	-----	-----	-----	--------------	DEPARTMENT OF THE ARMY ORGANIZATIONAL MAINTENANCE REPAIR PARTS AND SPECIAL TOOL LISTS TM 5-3820-205-20P/2.	----	----	2	2		

Source codes				Federal stock No.	Description	Unit of issue	Expendability	Quantity authorized	Quantity issued with equipment	Illustration	
Materiel	Source	Maintenance	Recoverability							Fig	Item
3	P	O	-----	6810-249-9354	ELECTROLYTE, SULPHURIC ACID (Repair Parts Manual Group 0612).	GAL	----	8	8		
	P1	O	-----	4210-383-7129	EXTINGUISHER, FIRE CARBON DIOXIDE: charged; hand; nonshatterable cylinder; permanent shutoff valve; squeeze-grip or trigger control; 5 lb MIL SPEC E-468, Type I, Class 1 (Repair Parts Manual Group 7603).	----	----	1	1		
9	P	O	-----	--------------	HARNESS, WIRING: trailer coupling (00000) 7728815 (Repair Parts Manual Group 2202).	----	----	1	1	38	9
	P	O	-----	--------------	HOSE, EMERGENCY: (63477) AD2610 (Repair Parts Manual Group 2202).	----	----	1	1		
	P	O	-----	--------------	HOSE, SERVICE: (63477) AD-2611 (Repair Parts Manual Group 2202).	----	----	1	1	38	24
	P	O	-----	--------------	PAD, JACK: (18990) 20310 (Repair Parts Manual Group 3100).	----	----	4	4	38	21
	P	O	-----	--------------	ROD ASSEMBLY, GROUND: (18990) 30162 (Repair Parts Manual Group 3100).						
	P	O	-----	3820-732-7363	SCREEN, WIRE: (Repair Parts Manual Group 7528).	----	----	2	2	38	3
	P	O	-----	3820-703-2271	SCREEN, WIRE: (Repair Parts Manual Group 7528).	----	----	2	2	38	3
					GROUP 32—BASIC ISSUE ITEMS TROOP INSTALLED						
					3200—BASIC ISSUE ITEMS TROOP INSTALLED OR AUTHORIZED						
10	P	O	-----	5120-277-8079	EXTENSION, SOCKET WRENCH: 16 in., ¾ in. square drive.	----	----	1	*	38	18
9	P	O	-----	4910-273-3662	GAGE, TIRE PRESSURE: calibrations 10 to 160 lbs range.	----	----	1	*	38	10
10	P	O	-----	4930-360-2801	GREASE GUN, HAND: lever operated, 16 oz capacity.	----	----	1	*	38	5
10	P	O	-----	5120-243-2963	HAMMER, HAND: machinist, ballpeen, ½ lb head.	----	----	1	*	38	8
10	P	O	-----	5120-240-5368	HANDLE, SOCKET WRENCH: 18½ in., ¾ in. sq drive.	----	----	1	*	38	20

Source codes				Federal stock No.	Description	Unit of issue	Expendability	Quantity authorized	Quantity issued with equipment	Illustration	
Materiel	Source	Maintenance	Recoverability							Fig	Item
10	P	O	-----	5120-244-7329	JACK, HYDRAULIC, HAND: self-contained, single pump, w/screw extension FED GGG-J-51, Type VII, Class 2, Style B, 5 ton capacity.	----	----	1	*	38	14
10	P	O	-----	4930-266-9166	OILER, HAND: 16 oz capacity	----	----	1	*	38	13
10	P	O	-----	5120-223-7396	PLIERS, SLIP JOINT: straight nose, combination, w/cutter 6 in. lg.	----	----	1	*	38	12
10	P	O	-----	------ -------	POWER IMPACT SOCKET: ¾ in. square drive, wrench size 11/16 in. for square nuts (55719) 1M 630.	----	----	----	----	38	15
10	P	O	-----	5120-236-2092	SCREWDRIVER, FLAT TIP: 10 in.	----	----	1	*	38	11
10	P	O	-----	5120-199-7767	SOCKET, DEEP STYLE: 1¾ in. x ¾ in. drive.	----	----	1	*	38	16
10	P	O	-----	4910-262-0392	TRESTLE, MOTOR VEHICLE MAINTENANCE: 5 ton capacity, adjustable-type, 15 in. closed h., 25 in. extended h., 12 in. lg o/a 10 in. w. o/a base; MIL SPEC T-14521 size 5 ton.	----	----	1	*	38	2
10	P	O	-----	5120-240-5328	WRENCH, OPEN END ADJUSTABLE: opening 0 to 0.947, 8 in. long.	----	----	1	*	38	22
10	P	O	-----	5120-240-1414	WRENCH, OPEN END ADJUSTABLE: opening 0 to 2.062, 18 in. long.	----	----	1	*		
10	P	O	-----	5120-393-0560	WRENCH WHEEL BEARING	----	----	1	*	38	1

Section III. MAINTENANCE AND OPERATING SUPPLIES

Item	Component application	Source of supply	Federal stock No.	Description	Quantity required for initial operation	Quantity required for 8 hours operation	Notes
1	0101 CRANKCASE			OIL, LUBRICATING: 55 gal drum as follows:			(1) Includes quantity of oil to fill engine oil system as follows: Crankcase—18 qt Oil filter—6 qt (2) Reference C9100-SL for additional data and requisitioning procedure. (3) See LO 5-3820-205-20/2 for grade application and replacement intervals. (4) Use oil as prescribed in item 1. (5) Tank capacity. (6) Average fuel consumption 9.5 gals per hour of continuous operation. (7) See TM 5-3820-205-20/2 for quantities, ambient temperatures, specific gravities, and replenishment. (8) Use same grease prescribed in item 9. (9) Quantity indicated is the minimum required for one each. Start when temperature is below 40° F.
		10	9150-265-9436(2)	OE 30	24 qt	(3)	
		10	9150-265-9429(2)	OE 10	24 qt	(3)	
		10	9150-242-7604(2)	OES	24 qt	(3)	
2	0306 TANK, FUEL			FUEL OIL, DIESEL: bulk as follows:			
		10	9140-286-5283(2)	DF-A	100 gal (5)	76 gal (6)	
		10	9140-286-5286(2)	DF-1	100 gal (5)	76 gal (6)	
		10	9140-286-5294(2)	DF-2	100 gal (5)	76 gal (6)	
3	0311 ENGINE STARTING AIDS	10	2910-355-6377	CAPSULE, METAL: pressure primed (1 MO-10)	1 (9)		
4	0501 RADIATOR			WATER:	70 qt		
				ANTIFREEZE: 55 gal drum as follows:			
		9	6850-293-1990	Ethylene Glycol	(7)	(7)	
		9	6850-174-1806	Compound Arctic	(7)	(7)	
5	4308 TANK, HYDRAULIC OIL			OIL, LUBRICATING: 55 gal drum as follows:			
		10	9150-265-9429(2)	OE 10	40 qt	(3)	
		10	9150-242-7604(2)	OES	40 qt	(3)	
6	7506 GEAR ASSEMBLY CONVEYOR DRIVE			OIL, LUBRICATING: (4)	3¾ qt	(3)	
7	7512 GEAR ASSEMBLY FEEDER DRIVE			OIL, LUBRICATING: (4)	8 qt	(3)	
8	7512 GEAR HOUSING, FEEDER DRIVE			OIL, LUBRICATING, GEAR: 5 gal drum as follows:			
		10	9150-577-5844(2)	GO 90	4 qt	(3)	
		10	9150-257-5440(2)	GOS	4 qt	(3)	
9	7521 PITMAN			GREASE, AUTOMOTIVE AND ARTILLERY: 35 lb pail as follows:			
		10	9150-190-0907(2)	GAA	80 lb	4 lb	
10	GREASE POINTS			GREASE, AUTOMOTIVE AND ARTILLERY: (8)	4 lb	1 lb	

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MAAG (1)
JBUSMC (1)
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  5-115 (2)
  5-117 (2)
  5-237 (5)
  5-262 (5)
  5-267 (1)
  5-278 (5)
  5-279 (2)
  5-500 (EA, EB, GB) (2)

NG: None.

USAR: Same as Active Army except allowance is one copy to each unit.

For explanation of abbreviations used, see AR 320-50.

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